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roblems of Economics

Selected Articles from Soviet Economics Journals in English Translation

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Selected Articles from Soviet Economics

Journals in English Translation

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- VESTNIK MOSKOVSKOGO UNIVERSITETA, SERIIA EKONOMIKI – JOURNAL OF MOSCOW UNIVERSITY, ECONOMIC SERIES
- VESTNIK STATISTIKI – JOURNAL OF STATISTICS
- VNESHNIAIA TORGOVLIA – FOREIGN TRADE
- VOPROSY EKONOMIKI – PROBLEMS OF ECONOMICS
- MIROVAIA EKONOMIKA I MEZHDUNARODNYE OTNOSHENIIA – WORLD ECONOMY AND INTERNATIONAL RELATIONS
- NAUCHNYE DOKLADY VYSSHEI SHKOLY – EKONOMICHESKIE NAUKI – SCIENTIFIC PAPERS OF HIGHER EDUCATIONAL INSTITUTIONS, ECONOMIC SCIENCES
- PLANOVOE KHOZIAISTVO – PLANNED ECONOMY
- EKONOMICHESKAIA GAZETA – ECONOMIC GAZETTE
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NATIONAL ECONOMIC PLANNING

Kommunist, 1961, No. 4

. EFIMOV:

ressing Tasks of Improving National Economic Planning

Recently our country marked the 40th anniversary
Lenin's decree on the establishment of the State
ommission for General Planning which initiated the
ganization of a unified system of planning the na-
onal economy of the USSR. Socialism, wrote V. I.
enin, is the planned organization of the social pro-
ction process for the purpose of ensuring the well-
ing and all-round development of all members of
ociety. In his writings Lenin outlined the basic
ethodological propositions for planning the national
onomy. These are, first of all: the principle of
mocratic centralism; a deliberately maintained
oportionality; priority for the growth in production
the means of production; the indissoluble connec-
on between current and long-term planning; the
mbination of branch and regional planning in a
ngle economic plan.

Consistently implementing Lenin's ideas in the
eld of planning, the Communist Party is steadily
proving the methods and organization of planning,
inging them in line with the level achieved by the
oductive forces, with the development of science
d technology, and the new political and economic
sks. The further elaboration of the methodologi-
l questions of planning assumes special signifi-
nce today. By means of improved planning our
sk is to raise the effectiveness of capital invest-
ents, to utilize fixed and working capital more ra-
nally, to make better use of such economic levers
cost accounting, profitability, price, profit and
ancial control.

One of Lenin's most important demands is that the
tional economy be planned on a strictly scientific
sis, that a comprehensive assessment of the
essing requirements of scientific and technical
ogress be made, and that its concrete direction be
termined correctly. Only the observance of these
nditions can put an end to the elements of volun-
rism in planning work and improve the quality of
nning.

Guided by the instructions of the July (1960)
enum of the CPSU Central Committee the Econom-
Research Institute of the USSR State Economic
uncil, in cooperation with the staffs of planning bodies, scientific establishments, economic councils and enterprises, has prepared proposals which will help to improve the indices of the state plan, increase the material incentives of the enterprises and economic councils in achieving the most effective utilization of fixed and working capital, increasing the output of the necessary variety of high quality commodities, increasing labor productivity and lowering production costs, as well as improving the planning of the complex economic development of their respective districts.

In this article we shall examine only a few of the questions of raising the scientific level of long-term planning, the continuity of planning, and the improvement of the indices of the state plans and their economic substantiation. These questions will be discussed in March of this year at a scientific conference in Moscow of personnel of planning organs, economic councils, enterprises and scientific institutions. The materials of the conference will be published in the journal Planovoe Khoziaistvo.

Some Methodological Peculiarities of Elaborating Problems of General Long-Term Development

The elaboration of a general plan for the development of the USSR national economy has confronted economic science with a number of new important theoretical problems. In accordance with the instructions of the 21st Congress of the CPSU the general plan must determine the ways and means of solving three major interrelated tasks: the main economic task, the building of the material and technical base of a communist society, and the achievement in the USSR of the highest living standard in the world.

The most important thing in fulfilling the main economic task of the USSR is to ensure the most effective ways and means of developing the Soviet economy, to gain as much time as possible in the economic competition with capitalism. In this connection it is important to have a system of natural and value indices which would correctly reflect the progress achieved in the fulfillment of the main economic task of the USSR. In the process of economic competition it is by no means necessary to reproduce the economic structure of the developed capitalist countries. We are creating a more rational economic structure, one which corresponds to the aims of building the material and technical base of communism and which takes account of the natural conditions of our country.

The implementation of the main economic task of the USSR is not an end in itself, crowning the economic development of our country. As N. S. Khrushchev aptly put it: "For us this is not the last stop, but only a whistle-stop station where we can catch up with the most developed capitalist country, leaving it at this whistle stop, while moving ahead ourselves." Communism, in comparison with capitalism, means a higher labor productivity based on higher indices in the development of the electrification of the national economy, and the extensive introduction of automation and chemistry in production.

The practical solution of the tasks connected with the building of the material and technical base of communism requires fundamentally new methods of long-term planning. Formerly, when the country's resources were extremely limited, the planning organs were forced to carefully concentrate and direct the main forces so as to develop the key branches and sections of the national economy. In those conditions this was the only correct and expedient approach to the elaboration of plans. Today, when the productive forces of Soviet society have grown immeasurably, the development of material production should be directed in such a way as to ensure the optimum combination of all branches of the national economy in a single complex, to ensure in the best possible way the all-round satisfaction of the material and spiritual requirements of the people.

That is why the method of scientifically determining the quantities and structures of ultimate social requirements assumes particularly great importance. We have in mind the method of scientifically determining the quantities of the social product which are subdivided into the consumption fund and capital investments. Each of these elements is divided into separate commodity groups determining the material and commodity structure of social requirements.

The importance of this was stressed by Marx who said that "social requirements, i.e., the use value on a social scale, determines the share of total working time which falls to the various specific spheres of production" (Capital, Vol. III, 1955, p. 648).

In determining the value and structure of the social product in the general plan, it is necessary to substantiate scientifically the requirements of ma in a communist society, disregarding whims and demands for luxuries and taking into consideratio the healthy requirements of a cultured person.

Our science has elaborated methods of determining the requirements of the population for the main items of material goods. Large-scale work has been carried out in preparing scientific norm of nutrition. The consumption norms for textiles, clothing and footwear are not yet sufficiently substantiated, but even the existing ones make it poss ble to determine the scale of growth of production Questions of the economic evaluation of different variants of the structure of consumption are not y sufficiently elaborated (for example, in relationships between certain interchangeable food products, natural and synthetic fabrics, gas and electr energy).

The prospects of the growth of consumption of individual goods and services are inseparably link with the forms of this consumption. The transitio to the communist principle of distribution accordi to needs will evidently be carried out primarily through increased consumption out of the public funds. The public consumption funds already run into scores of billions of rubles. That is why it is so important to continue the elaboration of problems of the social forms of consumption, giving sp cial attention to the economic significance of thei development (for example, the system of public catering, the renting of automobiles, etc.). The ca culation of a rational budget for the population als plays an important role in determining the level o consumption of material and spiritual values. Thi budget should provide all the conditions necessary for the harmonious physical and spiritual development of man, and the most effective utilization of the material and labor resources of society. In th long run the elaboration of methodological problems of the general plan must be aimed at ensuri for the Soviet people the highest living standard i the world.

The specific features of working out the econom ic problems of the general prospects of development are also conditioned by the length of the peri embraced by the plan. It is no easy task to determine the main indices of the country's economic d velopment over a period of 15 to 20 years, the characteristic features of the technical level of pr duction and the organizational forms of social lab In working out a five-year plan one can proceed from the draft projects which will become a reali in 3 to 5 years time. But it is quite another thing to work out a plan for a period of 15 to 20 years.

First of all it is necessary to provide a scienti substantiation for the rate of growth of the social roduct and the national income, the most important tios of material production, and the rate of growth social consumption. The question of the rate of onomic growth occupies a central place in the gen- ral plan. For besides calculating the data on the rerage rates of growth, it is also necessary to dif- rentiate these according to the various spheres of aterial production and stages of development, for ample, for five-year periods or, for the immediate ture, on an annual basis.

How do we understand the concrete method of de- rmining the basic indices of the country's econom- development in the general perspective? We see as a combination of the methods adopted in plan- ng work of calculating according to progressive orms and over-all calculations of a general eco- omic character. For example, in calculating the te of economic growth we take into account the rate growth of labor productivity, the total amount of orking time at the disposal of society, the possible crease of accumulated resources, the ensuring of eir most effective utilization and other interrela- onships.

The methods of drawing up a general plan for the evelopment of the USSR national economy for a pe- od of 20 years have nothing in common with the ourgeois forecasts which are based on a mechani- l application of past tendencies to the future. We n hardly be surprised that these forecasts never me true. Business Week, an influential American agazine, wrote in this connection: "... The only ing that can be said about any long-term forecasts economic development is that they are never justi- ed."

The Principle of Continuity in Planning

The main propositions on continuity in planning ere outlined in Comrade N. S. Khrushchev's re- ort at the USSR Supreme Soviet's session in 1957 d in the decision of the CPSU Central Committee d the USSR Council of Ministers of December 26, 60. N. S. Khrushchev said in his report: "We ust organize our planning in such a way as to know ready in the current year the main outlines of the an for the next year, and in the current five-year an the main outlines of the next five-year plan, or least of its first years."

The process of material production is continuous, ereas the existing system of elaborating annual d even five-year plans, as it were, artifically eaks up this process. At the end of each year and the end of the five-year plan period we do not, as rule, have a detailed plan of work for the future. ontinuity in planning is necessary if we are to dertake the timely construction of large projects with a long-term cycle of construction work, to ensure the continuity of the plans for adjacent periods, to ensure the timely technical preparation of enterprises for the production of new commodities, and to be able to organize the normal delivery of material and technical supplies.

Continuity in planning is necessary to permit the introduction of amendments to the long-term plans. It is common knowledge that in the process of its implementation any long-term plan becomes "outdated." This is a direct result of the new requirements of society, as well as the result of major technical achievements, the discovery of new deposits of raw materials and a number of other factors. For example, if the Fifth Five-Year Plan envisaged a 70% increase in industrial production between 1950 and 1955, the annual plan for 1955 already implied an 80% increase and the actual increase was 85%.

Transition to continuous planning will raise the organizing role of the plan in the development of the national economy, will contribute to the discovery and mobilization of new reserves and to an increase in the economic effectiveness of social production. The basic advantage of continuous planning lies in the fact that it ensures a closer and constant combination of current and long-term planning.

The general plan of national economic development will form the basis of the entire system of planning. This plan will be made of five-year plans which represent consecutive stages in implementing the program of the comprehensive building of communism in our country.

Proceeding from the general plan, in the second half of each five-year period the next five-year plan will be drawn up — beginning with the enterprises and economic councils and going right up to the national economic plan for the country as a whole, which is elaborated by the central planning organs. This plan will be approved by the respective organs not later than one year before the beginning of the next five-year plan. The five-year plan is the main planning document drawn up with annual subdivisions. Such five-year plans will enable us to ensure the strict continuity of the annual plans and to shift in the future from the annual elaboration of plans to a system of annually amending the targets envisaged by the five-year plan. In our opinion, in separate sections of the plan it is already possible to abandon the system of drawing up annual plans and to confine ourselves to the introduction of the necessary corrections.

The amendment of the annual targets (or the elaboration of annual plans) is carried out by the planning organs at all levels two years in advance in all the indices. This ensures the continuity of two contiguous current plans, the timely revision and specification of the five-year plan and the utmost stability of the targets of the plan. In the middle of each year the central planning organs, in accordance with the progress of the plan and the new requirements of the national economy, inform the State Planning Committees of the Union Republics about the necessary changes which should be provided for in the following two years. The latter pass this information on to the economic councils and the regional and local planning organs. And they, in turn, send this information on to the enterprises. The enterprises, taking the new possibilities which have been uncovered into account, prepare their proposals on suitable changes in the five-year plan for the next two years. The annual plan and the target figures for the next year, drawn up in accordance with the necessary amendments, are examined and approved in conformity with the established procedure.

The planning organs of the USSR and the Union Republics take the proposals of the economic councils into consideration and annually elaborate the most important indices for production and capital construction for the year following the current five-year period, i.e., each time for five years in advance. In this way we permanently retain a five-year perspective and ensure the correct proportions in the development of the economy of the USSR and the Union Republics.

The organs responsible for long-term planning systematically draw up proposals for the development of individual branches of the national economy. These proposals are implemented during the elaboration and specification of the current and long-term plans. In this way long-term planning will be carried on continuously, instead of the former practice of timing it in the last month of the year or the last year of the five-year plan.

The five-year plans, as state documents which are examined and approved by the supreme organs of the state, formulate the main economic and political tasks of the economic and cultural development of the USSR. The five-year plans can combine best of all the aims and tasks of the general, long-term plan with the current annual plans. It is important to retain the five-year plans because they have a tremendous mobilizing significance and serve as a program of action for the entire people.

Such is the newly envisaged order of planning. During the transition to this sytem it is important to ensure the unity of the whole system of indices, both in the current and long-term plans. At the same time the current plan must include more detailed indices in the nomenclature of produced goods and in the material and technical supplies.

Special consideration should be given to the question of indices for production and capital construction, which should be elaborated annually wh the plans are being amended five years in advanc We hold that the scope of these indices must be co siderably narrower than the scope of indices for the five-year plan and should define only the basi inter-branch ratios. It would be advisable to include in the scope of these indices for each branc the most important items of production (5 to 10 items), the volume of capital investments, the co missioning of production capacities, as well as some important indices of scientific and technica progress.

The organizational forms of elaborating long-term plans also need improvement. According to the existing practice long-term plans are drawn u mainly by the planning organs of the USSR and the Union Republics, as well as by separate ministrie and departments. But the continuity and effectiveness of long-term planning can be improved if it carried out by each enterprise.

The continuity of planning can be ensured only there will be an orderly system of examining and approving the five-year plans of the enterprises and the annual amendments to the five-year plan targets or the annual plans. At the same time it necessary to resolutely put an end to the practice of repeatedly revising the plans in the course of the year, to stop the amendment of the monthly operational tasks of enterprises and to limit shar ly the possibility of changing the quarterly plans. With this aim in view it is important to strengthe the role of operational reserves in the distributio of material resources and capital investments so as to ensure that the additional demands for raw and other materials, fuel and equipment, which m arise in the course of the implementation of the plan, be covered mainly by reserves without nece sitating a change in the plans.

On Raising the Incentives of Enterprises in Fulfilling the Plan

Our industry has great possibilities for improving the economic results of its work. Howev these possibilities are not yet utilized to the full. One of the reasons for this situation can be seen the shortcomings of the system of indices applyin to the operations of industrial enterprises. The indices of the plan, just as the system of materia and moral incentives, are called upon to stimulat the discovery and utilization of production reserves, and to actively influence the continuous d velopment and improvement of production. However certain indices do not reflect with sufficient accuracy the economic results of the work of an iterprise, the degree of effectiveness in the utilizaon of fixed and working capital, the introduction of ew technology and advanced forms of the organizaon of production. Many of the natural indices do ot provide sufficient incentives for the enterprises produce more economical and high quality types goods. For example, the planning of certain ypes of machine-building output in terms of weight oes not stimulate the manufacture of compact and ighly productive machines. This is also true of the roduction of new economical types of rolled steel the metallurgical industry and the manufacture of igher quality commodities in the paper industry.

At present labor productivity in industry is measred according to gross output (in constant prices of e enterprises per employee). This method often istorts the results and does not stimulate to a sufcient degree the struggle to raise the productivity labor. The main shortcomings of the labor prouctivity indices stem from the deficiency of the ross output index.

The bonus system (depending on the indices of exenditure per ruble of marketable output) leads to a reference for "profitable," high yielding types of utput; this does not promote the fulfillment of the ssortment plan. In most cases the need to master ew types of production places the enterprise at a isadvantage compared with the enterprises turning ut old types of production.

Shortcomings in the system of price formation eriously impede the planning of production and the rganization of material incentives. We regret to y that only insignificant use is made of this sysm for increasing incentives in technical progress d for encouraging the output of more advanced and fective types of equipment, economical materials d high quality consumer goods.

In working out proposals for improving the sysm of indices, special attention was given to suring that this system would be in greater conrmity with the new organizational forms of ecoomic management and the principles of democratic ntralism. Only such principles can ensure the ity of centralized planning of the national economy d the development of local economic initiative, as ell as the production activity of broad sections of e working masses.

In addition to the unified or so-called "common" dices of the national economic plan, it is also innded to use differentiated indices of the volume of oduction, labor productivity and costs of producon so as to be able to take account of the peculiaries of each industry. It would be correct to regard e index of marketable output as the main index for th the total volume of industrial production and r the production of individual enterprises. In long-term planning this index should be determined in constant prices, and in current planning in existing prices. The gross output index, calculated according to the factory method, should only be retained in the annual reports and accounts.

It has been proposed that the system of natural indices of the volume of production be improved. The indices of output in kind should correctly reflect its consumer qualities. For example, instead of using the weight indices of the volume of production in the machine-building industry, it is advisable to use indices characterizing the capacity of the manufactured machines and equipment.

In certain plan indices, in addition to measuring the volume of output in terms of weight it is proposed to establish additional indices which would stimulate economies of materials and at the same time promote the improvement of quality. For example, we should calculate the volume of pipe production on the basis of their inner diameter, in addition to their weight and volume characteristics. In the production of certain types of paper (printing paper, newsprint, etc.) it is advisable to use a square meter index in addition to a weight unit index. The production of sole-rubber and stiff leather goods in light industry should also be planned according to the square meter index.

In those branches where the conventional-natural indices do not reflect the real volume of production it is recommended that use be made of weight or other measures which would provide a more complete picture of the quality of the output. It is better to plan and calculate the volume of production of soap and various synthetic cleaners according to weight without conversion to other indices.

The introduction of new commodities into production could be stimulated by such a generalized index as the percentage (share) of the new output in the total volume of production (in value terms).

The relationship of output to all fixed production assets of an enterprise could serve as a generalized (synthetic) index of the utilization of fixed assets in the branches of industry: output per one thousand rubles of fixed assets ("asset yield"). The marketable production index of the enterprise should be used in calculating the volume of production, and the indices of fixed assets should be calculated by using the average annual value of production assets. The index of utilization of fixed assets will help to establish the main tendencies in the relationship between the volume of production and fixed assets. And this, in turn, will promote a more correct assessment of the volume of capital investments required when the long-term plans are being drawn up. The index of the utilization of fixed assets can also be used for ensuring a more exact evaluation of the effectiveness of capital investments.

To make better use of the fixed production assets it is recommended that the non-amortized value of the machines slated for replacement be charged to profits and losses of the enterprise, so as to create an incentive for the preservation of equipment. In exactly the same way it would be advisable to accumulate the surplus amortization in a special account, so as to create a fund for the modernization of equipment. After the termination of the planned period for assembling the equipment received by the enterprise for replenishment, the amortization should be charged to this fund and listed with production costs.

Labor productivity at the enterprises can be measured more exactly by introducing branch indices, both natural and in value terms, characterizing the volume of production and the level of labor productivity in each branch. Within the limits of an economic administrative district (economic council and enterprise) the labor productivity indices contained in the plan should be calculated separately on the basis of the indices for determining the volume of production accepted in each given branch, both in natural categories and in value terms. For example, in the coal industry — in conventional tons of coal; in mass production machine-building — in output in natural categories (expressed in conventional-natural units), etc.

In planning costs of production and the reduction of production costs the following indices, differentiated for the various branches, are recommended:

a) the cost of a unit of output — at enterprises of branches with a uniform output, for example, in the mining industry, at electric power stations, at mass production machine-building plants;

b) a reduction in the cost of comparable marketable output — at enterprises with a large but comparatively stable nomenclature, above all in the light and food industries;

c) expenditures per ruble of marketable output — at enterprises with a comparatively stable level of profitability of individual commodities.

Since the plans of enterprises must determine the level of expenditures and the amount of accumulation, the production cost of the total volume of commodity output can serve as a common index (coordinated with output targets expressed in kind) for the enterprises of all branches.

It is important to organize the system of planning in such a way as to make the enterprises strive for higher quantitative and qualitative plan indices. In rewarding individual collectives and workers it is necessary to proceed from the combined interests of production, each worker individually and socialist society as a whole. However the existing systems of material incentives do not solve this task fully. The struggle for higher indices should begin durin the process of drawing up the plan.

There are various ways of providing an incentiv for an enterprise to uncover new reserves and to utilize them more fully during the period when the plan is still being elaborated. For example, highe material rewards can be provided for setting high targets in the plan if they are fulfilled, than for th overfulfillment of plans. For this purpose a great share should be allocated to the enterprise fund from the planned increase in profit, and a smaller per cent from the above-plan profit. It is possibl to provide a greater incentive for an enterprise o economic council in mobilizing their reserves not only during the elaboration of the plan, but in the course of its realization as well. This can be don for example, through the introduction of a combin index representing one half of the product of multiplying the quantity of the planned increase (expressed in per cent of the level of the previous year) by the actual increase in production (also in per cent of last year's level). This index may be called the combined coefficient of the growth of production. It can also be applied to other quantitative and qualitative indices (labor productivity, the utilization of fixed assets, profitability, etc.).

Of great importance for the system of economi incentives is the correct determination of econom ically rational criteria which give a right to material rewards for an enterprise and make the size this reward dependent on the results achieved. Practice shows that the incentive funds should be based on a system under which their main source of replenishment will consist of allocations derive from economies achieved through lowering the co of production, as well as the actual accumulations of the given enterprise. This will ensure coordin tion between the sources of replenishing the funds and the production indices achieved by the enterprise. With the aim of promoting material incentives it has been proposed that the following funds be set up: the production fund of the enterprise used for developing and improving production; the material incentive fund of the enterprise designat for the purpose of improving the cultural and service facilities of the enterprise and for individual bonuses; a centralized fund of the economic council for developing new technology.

At present, because of great disparities in the level of profitability, enterprises are placed in unequal conditions in the matter of setting up funds. This situation will be rectified to a considerable gree after a revision of wholesale prices of mean of production. It will be liquidated completely wi the establishment of differentiated (for separate nterprises) norms of allocations of accumulated unds to the incentive funds. These norms must take nto account the differences in the technical level of he enterprises and depend on the share of new out- ut.

The total sum of bonuses must be controlled by he share of allocations to the premium fund from he planned and above-plan accumulations or from he sum economized on the costs of production, as vell as by limiting the maximum size of the bonuses eceived by individual workers.

The implementation of these measures will make t possible to introduce new technology out of the conomized funds. This will raise the responsibility f the enterprises, relieve the economic councils rom unnecessary control over them and give the conomic councils the possibility of concentrating on he elaboration and implementation of measures of ational economic importance.

Proposals aimed at raising economic incentives n industry call for additional study and verification. For this purpose it is advisable to conduct experi- nents in 2 or 3 economic councils with a simple conomic structure, but one embracing all the main ranches of industry.

The Level of Economic Substantiation of the Plans Must be Raised

The socialist system creates the possibility of onducting economic activity along rational, eco- omical lines. The utilization of these possibilities epends largely on the rational elaboration of plans, n their economic soundness. V. I. Lenin attached remendous significance to substantiating the effec- iveness of the adopted decisions in the plans. This dea was vividly reflected in the GOELRO plan in vhich the analysis of the prospects of economic de- elopment proceeded from the task of raising labor roductivity as the basis of the socialist transfor- nation of society. Lenin called on the planning or- ans to carefully select the most effective variants.

Thrift and justified economizing has nothing in ommon with miserliness, when tremendous possi- ilities for developing the economy are overlooked or the sake of saving a paltry penny.

A correct, scientifically substantiated evaluation f the effectiveness of the given expenditure is of remendous importance in this matter. Recently nethods have been elaborated for determining the ffectiveness of capital investments, the economic ffectiveness of mechanization and automation of roduction, etc. This, however, does not give us rounds for regarding the problem of the economic ubstantiation of plans as being fully solved. More- ver, it would be correct to say that we are still on the threshold of a genuinely scientific elaboration of this important problem.

The task consists of making a profound analysis of the actual processes of production, using for this purpose concrete mass data on the expenditure of labor and material resources for the production of a unit of output. This analysis must be based on data for the cost of production with due regard for capital investments per unit of output.

The introduction of important changes in the practice of the economic substantiation of plans for new technology has become an urgent necessity. At present the plans for scientific and technical progress are, in actual fact, isolated from the economic results of the work of enterprises. The dynamics of reducing the cost of output and the profitability of production are not coordinated in any way with the plan for introducing new technology and the growth of mechanization and automation of labor. This is a major shortcoming in our economic work. We must achieve an integral coordination of the indices of economy resulting from the introduction of new technology with, above all, the plan for reducing the cost of production. This is a "common" index which can be derived not only for an individual enterprise, but for a whole branch, an economic council and the national economy as a whole. This will enable the higher planning organs to assess the real significance of the introduction of new technology for reducing the cost of production on a national scale.

The economic substantiation of the production and capital investment plans, including the designing of new enterprises, shops and sections, as well as the reconstruction of existing ones, must of necessity take into account the need for continuously increasing the specialization of production.

The effectiveness of the long-term plans of technical development for individual enterprises should be substantiated by comparing them with the branch norms and standard design solutions. The range of questions involving the economic substantiation of the plan, which come under the competence of the higher planning organs, is now expanding considerably. An analysis of the structure of industrial and agricultural production, the relationships between different types of transport, as well as an analysis of inter-branch and inter-district ties, especially in industry, assume particular significance.

With this aim in view, variants of the plan for different structures of production should be drawn up, variants which provide for the interchangeability of the separate types of output and for different methods of their production. Thus, different structures may be proposed for the fuel industry (the share of coal, oil and gas), as well as variants of methods for their production or extraction; for example, in the mining of coal (open-cut method, coal-pits, hydro-mining, etc.). A comparison of variants of the plan with a different structure will help to reveal the economic effectiveness of each of them. For example, as a result of progressive changes in the structure of our fuel industry the cost of a unit of conventional fuel will be reduced this year by 13% compared to 1958.

The economic substantiation of the plans takes place at all levels of the planning system: enterprises, economic councils, state planning committees of the individual republics and, finally, the central planning organs. It goes without saying that the system of substantiation must have a common basis — technical and economic norms — at all these levels.

It would be wrong to say that enterprises do not have norms for the expenditure of labor, raw materials, semi-finished goods, energy, etc. On the contrary, every enterprise has thousands of such norms, and large machine-building plants have tens of thousands. But usually these are current production norms which do not take sufficient account of scientific and technical progress. As a rule, the economic councils do not have modern branch indices. This impedes analytical work and makes it impossible to judge to what extent the norms existing at individual enterprises are backward or advanced in relation to other enterprises of the same branch.

The time has come to create a system of technical and economic norms and indices for separate branches and types of production. For example, it is necessary to elaborate such indices as output per unit of value of fixed and working capital, labor requirements of standard articles, the utilization of materials per unit of output, etc. Such a system of technical and economic norms would become a reliable criterion for the objective evaluation of the plans, both at the enterprises and in the economic councils.

In addition to creating a system of norms it is also important to improve statistical information on the progress of national economic development. Official statistics do not yet provide an answer to very many questions connected with the analysis of the economic effectiveness of social production. One of the basic reasons why statistics lag behind the requirements of life lies in the fact that the system of accounting does not correspond to the new requirements of the organization of national economic planning.

It is also necessary to ensure accurate accounting in the branches of the national economy so as to study structural changes and draw up plans for the development of specialization and cooperation. Within each branch commodities corresponding to its general type should be distinguished from other types of output.

The time has come to introduce repeated accoun ing in industry as a whole, as well as in the separate branches. Accounting of the volume of the finished product should be organized as as to be able to evaluate the results of the work of the branc during the year without resorting to repeated accounting. We feel that the solution of this task can facilitate the drawing up of summary and planning inter-branch balance accounts of production and th distribution of output based on the widespread application of mathematical methods and electronic computers. In 1960 the USSR Central Statistical Administration carried out extensive work on draw ing up such a balance for 1959 based on the experi ence of a mass sample survey of industry and construction (about 11 thousand enterprises were surveyed).

A summary inter-branch balance account will enable us to make a profound study of the links which have been formed between all branches of our national economy. There are grounds for sup posing that this will be of great importance for the economic analysis of social costs of production an for regulating price formation. The indices of thi balance will serve as a basis for planned inter-branch balances. The introduction of such balance into the practice of national economic planning is one of our most important tasks.

The new important tasks confronting economic science and the planning organs call for an improvement in methods of calculation. This can be facilitated by the application of mathematics and electronic computers. Marxism has always attached great importance to the utilization of math matical methods in science. Karl Marx pointed o that science will only reach perfection when it suc ceeds in utilizing mathematics. However, the app cation of mathematical methods in economic calcu lations can have a positive effect only when it is based on a correct economic theory, on Marxism-Leninism.

Such are some of the current problems of the methodology of national economic planning. The working out of these problems can be successfully accomplished through the joint efforts of a numbe of scientific institutions with the active participation of the practical workers of the planning orga economic councils and enterprises.

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. BOR AND A. NOTKIN:

Methodological Problems of the Balance of the National Economy

The planned balance of the national economy of the JSSR represents a system of interconnected synhetic indices of socialist expanded reproduction. eflecting the operation of socialism's objective economic laws, it plays an important part in the soluion of practical problems of national economic planing. The balance of the national economy is inended to characterize the rates, proportions and nterconnections in the national economy, the use of he social product for the replacement of the means f production, for consumption and accumulation. t the same time it serves as an important instrunent for drafting the plan and checking on its fulfillnent.

Elements of a balance of the national economy vere embodied in economic plans immediately after he establishment of Soviet power. The very first urrent economic plans and the long-term GOELRO lan included balances of a number of elements of eproduction. Calculations of the national income, he structure of its final utilization, and also the inomes of the population were introduced in planning eginning with the First Five-Year Plan. In 1939, he first layout of a planned balance of the national conomy was worked out and its systematic elaboraion began.

Planned balances of the national economy with a amified system of indices have become an organic art of annual and long-term plans in the postwar eriod. Beginning with the Fifth Five-Year Plan the tate Planning Committee of the USSR has been comiling planned balances of the national economy not nly for a single year, but also for long-term perids.

The role of the planned balance of the national conomy as an important instrument of planning has een enhanced. At the same time the USSR Central tatistical Administration has greatly extended the cale of its work on the balance of the national econmy for the preceding period. Extensive use is nade of calculations of the real incomes of workers, mployees and peasants, calculations of the balance f the money incomes, expenditures and purchasing unds, of the population for Union Republics, terriories and regions, material balances of means of roduction and consumer goods. The layout of the alance of the national economy for the preceding period has been improved. Formerly such synthetic indices as the social product and national income characterizing the process of expanded reproduction in generalized form were planned and calculated only for the USSR as a whole. In recent years the work of calculating the indices of the social product and national income has also been undertaken in the planning and statistical agencies of the Union Republics.

But it would be wrong to say that balances of the national economy for the preceding and planned periods have already taken their proper place in national economic planning, and that all methodological problems pertaining to their compilation have been solved. Moreover, the rapid development of the socialist economy demands the constant improvement of national economic planning, specifically the methodology of compiling the balance of the national economy. Important tasks in the methodology of planning arise in view of the decisions of the July (1960) Plenary Meeting of the Central Committee of the CPSU which instructed the USSR State Economic Council, the USSR State Planning Committee, the USSR Academy of Sciences and the USSR Central Statistical Administration to draw up and submit to the USSR Council of Ministers proposals for the perfection of the indices of the state plan and pointed to the need for the further improvement of the planning system.

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One of the most important methodological problems of socialist planning is the methodology of elaborating preliminary (provisional) balances of the national economy as the starting point for working out long-term plans (especially those designed for very long periods).

It is impossible to draw up a national economic plan without determining the rates, proportions and interconnections in the economy for the planned period. The concrete technical and economic proportions and relations within branches and between separate branches can be ascertained with sufficient precision by means of a system of material, labor and financial balances prepared when drawing up the plan. But to determine the major economic proportions of expanded reproduction (proportions between departments I and II of social production, between industry and agriculture, consumption and accumulation, production and consumption, the replacement fund and the national income, etc.), these balances are insufficient. Only a balance of the national economy makes it possible to give quantitative expression to the major national economic proportions and the relations between particular social forms in the economy, between social classes in their dynamics, interconnections and interdependence. Determination of the possible rates and main proportions of expanded reproduction and, consequently, the volume of resources and the nature of their distribution, are of primary importance in drawing up national economic plans. That is why the planned balance of the national economy must be prepared not only when the drafting of national economic plans is being completed in order to dovetail its separate parts, but when work begins on annual and long-term plans. The elaboration of preliminary balances assumes particularly great importance under conditions of continuous planning.

The experience accumulated in drawing up balances for preceding and planned periods makes it possible to work out preliminary (provisional) balances of the social product and, on this basis, to determine approximately the principal indices of socialist expanded reproduction for the period ahead. A preliminary balance of the social product is drawn up proceeding from the indices of the balances of the social product for the preceding period, an analysis of the proportions and interconnections which actually existed in previous periods, and an accounting of reserves and potentialities (above all, those connected with technical progress, increasing productivity of social labor and more rational distribution of labor resources).

Three principal methods of preparing a preliminary balance are now used in practice, methods which mutually supplement and control one another.

The first method is connected with the calculation of the objectively possible volume of productive accumulation and the ratio of capital to output. In determining the indices for the future period, planning agencies proceed from a stable rate of productive accumulation as a first approximation.

The rates of growth of social production depend not only on the volume of productive accumulation, but also on its utilization, something which is affected by diverse factors. Each of these, under certain conditions, may lower or raise the effectiveness of accumulation. Among the most important of these factors are:

1. Changes in the branch structure of industrial production. In different groups of industries the ratio of fixed productive capital to gross output is different. Thus, in 1957 this ratio was 0.90 in industries producing means of production and only 0.18 in industries manufacturing consumer goods. The ratio of capital to output is particularly high in the fuel and power industry (in 1956 it was 2.26), in the iron and steel, non-ferrous metals and chemical industries. The priority development of heavy industry, specifically the accelerated development of the electric power, oil and gas industries, the production of iron and steel, non-ferrous metals, ore mining, and the output of the chemical industry are objective factors making for an increase to reckon with the contradictory nature of the tendencies in the changing branch structure. The ratio of capital to output should continue to rise as long as the branch structure is changing. With the completion of this process and the rapid development of such branches as organic synthetic chemistry, the production of light metals and semi-conductors, radio-electronics, etc., the ratio of capital to output should decline appreciably. Moreover, the rise in the ratio of capital to output is compensated by a saving on current outlays and a rise in the productivity of social labor in the entire national economy.

2. The implementation of a large-scale program of investment in new, economically undeveloped areas, which inevitably leads to a temporary rise in the ratio of capital to output. But the tapping of the very rich natural resources of the Eastern area should ensure a considerbble rise in the effectiveness of investments in the future.

3. Completion of mechanization of labor-consuming processes in all branches of the national economy. The effectiveness of investment involving the initial introduction of mechanized processes is manifested not in greater output, but in a reduction of the number of workers engaged in production and a cut in production costs. But as experience shows the completion of mechanization, the shift from partial to complete and integrated automation of production, should lead to a substantial rise in the effectiveness of investment.

The factors which directly promote the higher effectiveness of investment are technical progress in all its forms, expansion of production through the reconstruction and re-equipment of existing enterprises, better use of fixed and circulating capital on the basis of technical progress, and stimulation of the initiative of the working people. An improvement in the structure of capital construction in industry is of great importance, namely, an increase in the share of equipment and a reduction in the share of building work.

All these factors operate simultaneously but the results of their interaction vary at different stages of economic development. The proper determination of changes in the ratio of capital to output is a ntricate and difficult task, but an absolutely exact and full account of all changes is not required in the preliminary balance. This is a task at the subsequent stage.

The second method of elaborating the preliminary balance is closely bound up with the first; it proceeds from calculations of the balance of labor resources for the planned period and the objectively possible growth of labor productivity. On the basis of demographic data the total population and the number of persons of working age is determined. Then he possible labor resources are calculated, as well as the manpower that could be drawn into production, social, cultural and other services and administraion. In determining the possible labor resources, he number of employed juveniles and persons above working age should be added to the number of able-bodied persons of working age, while servicemen, persons doing household work, persons who study full time and non-working invalids should be deducted.

In distributing the persons employed in the naional economy between the productive and nonproductive spheres, account should be taken of the need for the increasingly fuller satisfaction of the spiritual, cultural and daily requirements of the people, as well as the rise in the productivity of social labor, a factor which makes it possible to increase he share of workers engaged in the non-productive sphere. By ascertaining the scale of the increase n the number of persons engaged in material production, and the objectively possible rates of growth of labor productivity, plans for increasing the volume of the social product and national income can be worked out.

The third method is based on the determination of the consumption fund and the balance relations between departments I and II of social production. The consumption fund is calculated on the basis of he consumption budget of the population for the preceding years. A planned (rational) consumption budget of the population is drawn up on the basis of n analysis of budgets of families and single perons, as well as the utilization of scientific and raional norms of consumption of primary food and on-food items, standards for the provision of housng, social, cultural and other services. This budgt makes it possible to establish the major part of he consumption fund. Calculation of the consumpion fund and the required accumulation of consumer oods enables us to establish the volume of output f department II. Then, by analyzing the summary alance of the national economy for the preceding ears and determining the coefficients of relationhips between departments I and II, the entire volume of the social product is established.

These methods of calculating the preliminary balance of national economy are employed simultaneously. The experience of planning calculations shows that they yield figures of one general order. A combination of these three methods in planning ensures a more or less satisfactory solution of the problem of fixing the scale of accumulation and consumption for the planned period.

The establishment of general proportions in the long-term plan enables planning agencies to work out a system of more specific balances — material, financial and labor.

In 1956 the first preliminary balance of the national economy for 1957 was prepared. In 1957-1958 such a balance was compiled for the period 1959-1965. Work on a provisional balance of the national economy for a 20-year period is now under way.

Mathematical methods and the achievements of computer techniques are destined to play an important part in national economic planning, specifically in the elaboration of the balance of the national economy.

The task of further developing and improving the methodology of the balance of the national economy consists of finding ways of dovetailing such synthetic indices as accumulation and consumption with inter-branch relationships involving the production and consumption of output in the national economy. The application of modern mathematical methods, and specifically matrix theory, linear programming, etc., and the utilization of electronic computers should ensure a basic solution of the problem of presenting in a concrete and detailed way the inter-branch proportions and connections reflected in the balance of the national economy. A deeper and more thorough study of the interconnections among branches and sectors, an exact determination not only of direct but also of total outlays on the manufacture of the product in individual branches is dictated by the requirements of planning in present-day conditions. In this connection mention should be made of the great importance of the work done by the USSR Central Statistical Administration in preparing an inter-branch balance of the production and utilization of the output of the Soviet Union's national economy in 1959. It provides a basis for the elaboration of such balances for the planned period.

So far this work is of the nature of purely methodological experiments. The development of mathematical methods of analyzing inter-branch connections, methods which are adapted to the needs of planning and take account of existing technical and economic indices, will extend the possibilities of utilizing the above balance for the correct determination of proportions between the output of various products. But in applying mathematical methods for determining national economic proportions, one should bear in mind that the system of linear equations, however perfect it may be, cannot replace creative national economic planning. This system of equations must not be regarded as an end in itself. In the final analysis it is subordinated to the task of finding possibilities for the maintenance of high rates of socialist expanded reproduction, achieving optimal combinations of accumulation and consumption, and the solution of social tasks under particular historical conditions, given the level of development of the productive forces and socialist production relations.

The finding of the national economic optimum in the plan and the balance of the national economy now rests on the preparation of a small number of variants of the plan. If an increase in capital investment in the national economy is accompanied by a substantial growth of trade, fuller coverage of demand by the supply of consumer goods, etc., this furnishes grounds for regarding the relations between accumulation and consumption, productive and non-productive accumulation, etc., as optimal under these conditions.

The use of improved mathematical methods could be of value not only in determining inter-branch ties, but also in finding the national economic optimum (the highest possible rates, the optimal relation between accumulation and consumption, between departments I and II, etc.), in solving urgent social tasks of the given historical period. But the use of these methods can be fruitful only if it rests on the theory of socialist reproduction, on knowledge of the economic laws governing the development of socialist society. Thus, an improvement in methodology and methods is of primary significance for the development of national economic planning.

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The proper determination of indices occupies an important place among the methodological problems of the balance of the national economy. The scale, level and rates of production of the aggregate social product under socialism can be measured and determined only in money terms. That is why the problem of prices and planned price formation is of tremendous importance in preparing a balance of the national economy.

The expression of the social product in terms of prices makes it possible, above all, to reveal the dynamics of the volume of output of the social product, to determine the rates of growth of social production, the changes in proportions between branches of production, between departments I and II, between social sectors, and also the proportions in the distribution and utilization of the consumption fund and the accumulation fund. For this purpose the product must be calculated in constant prices of some period taken as a base. But the use of constant prices of a single period makes it difficult, and more often simply impossible, to ensure the dovetailing of production, distribution and utilization of the product. This makes it necessary to evaluate the product in the existing sales prices a which it enters the national economic turnover, is consumed and accumulated, that is, in prices on th basis of which the real processes of reproduction are effected in each given period of time. Hence the great importance of calculating all indices of the balance in current sales prices, which ensure the mutual coordination of the indices of output of the product with indices of the formation and utilization of incomes, the volume of output and costs of production, the incomes of the population and trade turnover, the incomes of enterprises an the budget, etc.

The existing system of price formation, as we know, presupposes the realization of a substantial part of the value of the surplus product created in branches of heavy industry, construction and agriculture through the prices of consumer goods. That is why the monetary expression of the value of the social product in the existing system of prices makes for some inaccuracies in determin the branch and social structure of production of th social product and national income. In our opinio these inaccuracies can be eliminated if the value o goods (with certain necessary deviations) is taken as the basis of price formation in the USSR. This is the only possible way of determining the corre labor proportions and relations in the balance of the national economy of the USSR, because any price deviates and cannot help but deviate from value, and it contains within it elements of distri tion and redistribution.

Because of substantial deviations of prices from value, the task of achieving a fuller and more correct determination of the value of the social product as a whole and of its separate parts in the balance of the national economy must be solved w the help of a system of economic calculations.

Planning and statistical agencies of the Soviet Union have first of all undertaken the exploration of methods of determining the magnitude of the newly created value in each branch of production, that is, the calculation of the national income according to the place of its creation (and not according to the place of its realization, as is the case under the existing system of price formation Calculations of the national income according to th place of its creation have been made for a numbe f years (since 1953) by the Central Statistical Adninistration and the State Planning Committee of he USSR. But the solution of the problem of realuing the entire social product (including material utlays) in terms of value is in the experimental tage this far. Of definite interest in this respect re the calculations made to revalue the social prodct of the USSR (with adjustment of existing prices y branches of the economy) in the balances of the ational economy of the USSR for 1956, 1958 and 959, calculations which also included a revaluation f material outlays. These calculations were based n the following principles: a) the surplus product as distributed in proportion to the necessary prodct; b) the magnitude of the necessary product in epartments I and II and the volume of output of deartment II going for the personal consumption of he population were preserved unchanged in money erms.

Naturally, all these calculations are merely the irst step. They must be improved, particularly by sing mathematical methods.

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The third group of methodological problems of he planned balance pertains to the indices and layut of the balance.

The elaboration of the layouts for the balance of he national economy of the USSR for the preceding nd planned periods is based on the Marxist-eninist theory of reproduction. These balances of he national economy reflect the concrete process of ocialist reproduction in certain specific periods. he significance of these balances is not confined to haracterizing the proportions between departments and II of social production. It is also of great imortance to characterize the branch structure of he national economy, the proportions and relationhips between industry and agriculture, production nd circulation, current production and capital contruction, and between individual economic areas of he country. The balance of the national economy of he USSR reflects the relationships between the prouctive and non-productive spheres in the process f distribution and utilization of the national income, he formation of primary and derivative incomes, he increase in both productive and non-productive ssets, the formation of and changes in reserves, utlays for defense, etc.

It is perfectly clear that without a full accounting f all the factors of production (in particular, withut determining the magnitude of fixed productive ssets), it is impossible to analyze and plan the ates and proportions of expanded reproduction for ny concrete period. At the same time, when curent prices change in connection with a reduction in roduction costs stemming from a rise in the productivity of social labor, the dynamics of the social product and its components, calculated in constant and current prices, will differ. This cannot help but be reflected in the balance of the national economy.

To characterize the concrete process of expanded reproduction three main balance tables were used in Soviet planning practice until recently: the balance of production, distribution and utilization of the social product; the balance of production, distribution and final utilization of the national income; the balance of labor resources.

But each of these balances characterizes only separate parts of the reproduction process. That is why of late a summary table of the balance of the national economy has been included in the system of balance tables. This summary table must show, in generalized form, the unity of the material and value aspects of socialist reproduction, its rates, proportions and interconnections. This table not only unites in a single system the indices of other sections of the balance, presenting them in their interconnection, but also includes a number of indices which are not included in these sections. The summary table specifically reveals how the accumulation of national wealth and the rise in the level of consumption in individual departments and social sectors of production, and also in the productive and non-productive spheres, are ensured.

An economic analysis of the more concrete connections and interrelations formed in the process of expanded reproduction requires the compilation of a number of special balance tables reflecting separate aspects and features of the reproduction process. For example, this calls for drawing up a balance of fixed assets which will reflect the process of reproduction of their major material elements.

Elaboration of balances of fixed assets, labor, the social product and national income will make it possible to undertake a more concrete analysis of the process of socialist expanded reproduction. Since the need for the practical guidance of economic development requires a more concrete analysis of economic processes, a third range of balance tables is compiled. The balance of the national economy is supplemented by balances of reproduction in social sectors, as well as a balance of the products of personal and subsidiary economies of the population. In addition to the balance of the social product, balances are drawn up of industrial and agricultural products, commodity resources and commodity turnover, machinery and equipment, fuel and power, etc. The balance of fixed assets is supplemented and elaborated in the summary balance of capital investments, in the balances of productive capacity. The summary balance of labor is concretized in the balances of labor resources of the collective farms, specialists and youth. The balance of the national income is elaborated and supplemented by balances of financial settlements, money receipts and expenditures of the population, and a summary financial balance of the product and income of the population.

The new tasks confronting the country's economy in the period of full-scale building of a communist society dictate the further development and enrichment of the layout and indices of the balance of the national economy. All aspects of building the material and technical basis of communism must find generalized expression in the balance of the national economy. To give a sufficiently complete characterization of this process the following main indices are needed: indices of the dynamics of productive assets singling out of the dynamics of fixed assets, indices of the dynamics of the number of people employed in the sphere of material production, indices of the dynamics of capital per worker in material production and the ratio of capital to output and, finally, indices characterizing the structure of social production which should reflect the priority growth of department I.

The balance of the national economy must not only reflect the dynamics of interconnected magnitudes, but also facilitate, together with branch plans and material balances, their most favorable combination.

A study of the economic factors that determine the rate of socialist reproduction shows that socialist society is able to scientifically determine the objectively possible rates of economic growth and, utilizing the tremendous advantages of the socialist economic system, to set and ensure the necessary rates of growth of separate branches of the national economy. Accomplishment of the main economic task and the building of the material and technical basis of communism in the USSR in a historically brief period presuppose high growth rates in industry and agriculture and the technical transformation of the entire economy. This is what determines the need for maintaining a high rate of productive accumulation in the national income during this period. With the level of economic development achieved in the Soviet Union a high rate of accumulation, far from conflicting with the growth of consumption by the masses, is a condition for the balanced development of the entire national economy. This is demonstrated by the targets of the Seven-Year Plan. The growing resources of the national economy make it possible to achieve an optimal combination of a rapid rise of productive accumulation and consumption by the masses.

In drawing up the balance of the national economy of the USSR in the period of the full-scale building of communist society, a fundamental task is to ensure the optimal combination of accumulation and consumption, high rates of building the material and technical basis of communism, and the growth, on this basis, of the people's living standards. It should be borne in mind that at a higher level of economic development the maintenance of the high rates of expanded reproduction inherent in socialism demand much greater absolute increases of output, the tapping of many more natural resources and, what is especially important, more intensive technical progress than under a lower leve of economic development.

The combination of high growth rates and large-scale productive accumulation with a rapid rise in the people's welfare can be more favorable achieved the more effectively the accumulation fund is utilized. In the period of full-scale building of communism the more effective use of the accumulation fund is becoming an increasingly urgent problem and acquires exceptional importance for guaranteeing high rates of expanded reproduction and a systematic and rapid advance in the living standard of the people. It is to the accomplishment of this task that the balance of the national economy, together with the entire system of national economic planning, is subordinated. The balance should single out not only the productive and non-productive spheres, and departments I and II, but also the main branches of the economy and of services. This will make it possible to control and direct in a planned way the distribution of the entire social labor in the interest of building a communist society.

Ensuring high rates of productive accumulation on the basis of technical progress, together with the implementation of a sweeping program for raising the people's welfare, require a harmoniously developed structure of the productive and non-productive spheres of social labor. The cultural advance of the members of society, the gradual release of women from irrational forms of household work, the rapid development of various spheres of services in conditions of the technical revolution, and the sharp growth of labor productivity in the sphere of production — all this determines the rise in the share of social labor in the non-productive sphere. An increase in the share of the working population in the Eastern areas (where huge resources of raw materials, fuel and power are concentrated) in the country's total population is also of great importance for the economic development of the Soviet Union.

The great significance of the social aspect of th alance of the national economy in the period of uilding communism must be stressed. In the proc- ss of development of state and collective farm- ooperative property and their merger into a single ommunist property, the distinctions between work- rs and collective farmers, between the state and ollective farm-cooperative sectors of the national conomy are gradually obliterated. This process hould be reflected in the balance of the national conomy with the help of indices characterizing the evelopment of socialist property in its two forms roductive and non-productive assets, the number working people, the ratio of capital to labor, the roductivity of labor and output in each social sec- r, the share of the social and personal subsidiary conomy in collective farm production, the living andards of workers, employees, collective farmers, c.).

If we analyze the present layout of the planned alance from these positions we find that many ecessary indices are missing. Thus, there are no ndices for the principal branches of production, the ocial sectors are represented by a limited number indices, there is no characterization of the dy- amics of the ratio of capital to output, the move- ent of the social product is determined only on the asis of realization prices and not of value, etc. he absence of these indices in the existing layout the planned balance is explained by the insuffi- ient methodological elaboration of important individ- al indices of socialist reproduction, the inadequate ystematization of the initial data, etc. Hence the reat importance of further improving the methodol- gy and methods of compiling the balance of the na- onal economy.

Problems of methodology in working out particu- r indices of the balance of the national economy erit serious attention. Much work has been done the past in defining the dividing line between the roductive and non-productive spheres. But so far ere is no uniformity in treating some specific roblems. Thus, some economists and statisticians assify passenger traffic in the productive sphere; hers include it in non-productive services; still hers, in the productive sphere only insofar as it rtains to travel by workers in the productive here (outlays for this form of transport are in- uded by them in the social costs of production). the opinion of these economists it belongs in the n-productive sphere to the extent that it serves e personal needs of the population. At times pub- shing is not included in the productive sphere. But far these details do not have a considerable in- uence on calculations of the national income.

The correct solution of the problem of so-called uble counting of the value of means of production is of great theoretical and practical importance for calculating the volume of the social product in the balance of the national economy. To this day this question gives rise to many disagreements. Some economists and statisticians (for example, Academician S. G. Strumilin) propose that the value of the social product be cleared of the turnover of the value of the means of production in the course of the year. In that case the value of the social product in the given year would consist of the sum of net output, depreciation of fixed assets, and the value of the stocks of materials at the beginning of the year consumed in the course of the year. In other words, the value of means of production in the social product would be taken into account only in part. But since the share of the value of the consumed means of production from the previous year in the social product is relatively small, the social product would be almost equal to the net output of the national economy.

The theory and practice of compiling balances of the national economy in the USSR have demonstrated that the method of calculating the social product without taking account of the turnover of means of production in the course of the year is unacceptable. First, it is wrong to equate a separate enterprise, as the primary link in the social division of labor, with the national economy which represents a system of social division of labor in all its interconnections. This system is constantly being reproduced on the basis of economic (cost accounting) relations between enterprises. That is why the so-called factory method is the only correct method of calculating gross output in industry. Second, in the course of a year several reproduction cycles take place in most industries. A considerable part of the means of production manufactured in the given year enters the process of production during the given year and not next year. The double counting of the value of materials, as the output of one cycle and as material outlays of another reproduction cycle of one and the same year, is not a statistical fiction. Human labor in the given year processes not only the materials available at the beginning of the year, but also the quantity of materials used in the course of the year at all stages of production. A product cleared of double counting does not offer the possibility of determining the relationship between the replacement fund and the national income, of revealing the laws governing its changes; it gives a distorted picture of the interconnections between departments, branches and social sectors of the national economy, inasmuch as the process of compensating for means of production plays a big part in these interconnections. In view of these considerations, in drawing up balances of the national economy of the USSR for preceding and planned periods, the social product is determined, first, as the sum of the gross output of all enterprises and, second, as the sum of the gross output of all reproduction cycles in the given year.

To substantiate their position the opponents of counting the turnover of the value of means of production in the course of the year sometimes refer to the process of specialization and to organizational changes in the economy. But the growth of this turnover is connected above all with the high rates of socialist expanded reproduction. As for specialization of production, in many branches, because of the specific conditions of the latter, the building of new enterprises from the very outset presupposes their specialization in the manufacture of one product. In branches in which various categories of production were combined earlier, specialization is effected chiefly by building new specialized enterprises which often manufacture only separate parts of articles. Of course, to determine the real dynamics of the social product an adjustment coefficient could be introduced to take into account the growth in the turnover the value of means of production resulting from the separation of some links from operating enterprises. But given the high rates of socialist expanded reproduction this coefficient would not be large.

The experience of preparing the balance of the national economy of the USSR has shown that the calculation of the social product must not be approached in a sterotyped way, without taking into account the peculiarities of individual branches. While gross output of industry is calculated according to the factory method, in calculating the gross output of agriculture, because of the natural character of reproduction in it, seed and fodder produced in the same farms are calculated separately. This makes it possible to determine correctly the relationship between crop production and animal husbandry. In Soviet statistics the output of construction is calculated as the value of the building, assembly, surveying and designing work done for new projects or for capital repairs. But since the output of construction is not building, assembly and other work, but factories, plants, etc., with their equipment, recently it has been decided to include in this output also the value of the installed equipment.

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One of the important tasks of the full-scale building of communism in the USSR is to develop further the system of democratic centralism, a system which combines single centralized, planned direction of the entire national economy with the management of the economy of the republics and economic administration areas by republican agencies and economic councils, which combines the initiative of central management agencies with the initiative o the working people. In present-day conditions, when a number of functions of planning and directi the economy have been turned over to local bodie the role of centralized planning in ensuring the pr portional development of the entire national economy and proper relations between the economy of different areas is exceedingly important. In view this, planning and statistical agencies are faced w the task of compiling balances of the economy on territorial scale, on the scale of Union Republics the first place.

In all the Union Republics work is under way at present to determine the volume of the aggregate social product and national income. This will ma it possible to obtain answers to a number of impo tant questions. For the first time, on the basis o calculating the gross output of such decisive branches of material production as industry and agriculture, planning agencies of the Union Republics are able to determine the level and scale of the e nomic development of the Union Republics.

Calculations of the volume and growth rates of the national income make it possible to establish the place of a Union Republic in the country's eco omy. Calculations of the level and dynamics of th real incomes of workers and employees on the on hand, and of peasants on the other, provide a clea idea of the relative level of living standards of various social groups and the relationship betwee this level and average living standards in the USS as a whole. Calculations of the volume of the national income and its utilization for consumption and accumulation provide a more thorough basis for planned capital investments, growth rates of real incomes and increases in the material and c tural standards of the population.

The State Planning Committees of the Russian Federation, the Ukrainian, Estonian and Armenia SSR's are calculating the volume of the national i come and also the main indices of the balance of the national income at all stages of its movemen (production, distribution and utilization). The involvement of the staffs of all the main departmen in the republic planning committees is a positive aspect of this work. In the process of working ou balances some difficulties are being brought to light. So far statistical agencies in the Union Republics are not calculating money incomes and expenditures by social groups (workers and emplo ees, peasants); they have not organized the elabo tion of balances of fixed assets; they are not compiling financial balances for preceding periods, e The central statistical agencies should accelerat the drawing up of methodological instructions on these important balance compilations, the urgent need for which is becoming increasingly clear.

SUPPLY, DEMAND AND PRICES

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. L. ZAK:

ole of Supply and Demand in the Socialist Economy

The existence of supply-and-demand relations
der socialism stems from the retention of com-
odity production in this phase of the communist
ciety and the value forms and categories inherent
it.

The place and role of supple-and-demand rela-
ons under socialism are in the main similar to the
ace and role of the law of value in the socialist
onomy. They are determined by the aim of social-
t production, by the operation of the economic laws
socialism, and they differ fundamentally from the
le and significance of these relationships under
pitalism.

The social substance of these relations has
anged fundamentally. The dominance of public
roperty in the means of production has done away
ith the exploitation of man by man, while supply-
d-demand relations, the operation of which is
mited, are subordinated to the economic laws of
cialism and are regulated by plan. They are uti-
zed for the purpose of accelerating the develop-
ent of production and satisfying in the best possi-
e way the requirements of the population. In these
rcumstances, supply-and-demand relations reflect
cialist production relations, relations which are
sed on fraternal cooperation and socialist mutual
ssistance of free people.

Thus, the level and relations of effective demand
d supply of commodities are a result of the main
tional economic proportions established by so-
ety with due account for existing objective condi-
ons and the tasks of socialist construction. That
why supply-and-demand relations under social-
m do not represent a mechanism by means of which
oduction is regulated by the law of value. They
e subordinated to the law of planned, proportional
velopment, and they perform mainly an auxiliary
rvice, important though it may be, the role of a
rticular type of auxiliary mechanism which pro-
des signals on the state of proportionality in the
tional economy, on the need for measures to es-
blish rational, or restore disturbed economic pro-
rtions.

The relationship between supply and demand for articles of personal consumption is determined mainly by the division of the national income into a fund of accumulation and a fund of consumption, and also by the basic national economic proportions, i.e., the proportions between departments I and II of social production, between industry and agriculture, between branches within these departments, etc.

However, supply and demand are relationships which appear directly on the surface of economic life, in view of which their concrete manifestations inevitably reflect not only the state of economic proportions, but also many other factors which influence them, objective, subjective, or accidental factors.

The absence of an equilibrium between supply and demand, which appears in the sphere of commodity circulation, is a synthetic index of the existence of a definite disproportion in the national economy. It may arise not only from the principal cause, a disturbance of the basic proportions connected with objective conditions, but also from other factors, such as an unsatisfactory state of transport, the system of price formation, currency circulation, organization of payment for labor, various mistakes and miscalculations in planning, etc. All these factors should be thoroughly studied in making a concrete analysis of the reasons for the disproportion between supply and demand found in a given period, with the object of taking steps towards its elimination.

But the relations between supply and demand are not limited to the role of giving passive signals. Like any other consequence, they are not indifferent towards their cause; they exert an active influence on it. A consciously sustained equilibrium between supply and demand tends to stimulate the development of production and the maximum satisfaction of requirements. On the other hand, failure to take timely measures to eliminate the causes of the disturbed equilibrium between supply and demand may lead to the spontaneous action of these relations, with consequent changes either in the level of prices for consumer goods, redistribution of the national income, violation of the principle of distribution according to work and lowering of the workers' interest in higher productivity of labor, or to a wasteful expenditure of labor which has not received public recognition. In any event, the spontaneous operation of supply-and-demand relations under socialism injures production and the interests of the working masses.

Consequently, under socialism supply and demand operate as production relations which are expressed directly in the sphere of exchange and distribution, and which in turn exert an active influence upon production and consumption.

But commodity circulation and, consequently, supply-and-demand relations are not an all-embracing and universal character under socialism. Thus, the land and state enterprises (factories, mines, electric power plants and their fixed assets may not be bought and sold; they may merely be transferred by decision of higher state authorities from one state organization to another.

Nor is labor power a commodity under socialism. A surplus of labor power, which may develop in some regions of the country, does not lead to wage cuts (as it does under capitalism with the operation of the law of supply and demand). Under socialism steps are taken in such cases to achieve a redistribution of labor power within the country in an organized way based on voluntary consent. Furthermore, a surplus of labor power connected with the growth of labor productivity resulting from the automation of production, which under capitalism leads to permanent unemployment and wage cuts, under socialism furnishes the material foundation for reducing the working day without any reductions in wages.

The operation of supply-and-demand relations is of varying importance in different spheres of the socialist economy. The influence of these relations depends to a considerable degree on who is involved in the process of commodity circulation: different property owners, or economically independent enterprises within the framework of general public property.

It should also be borne in mind that the degree of the influence exerted by supply-and-demand relations in different sectors of socialist economy is not a constant factor, that it changes in the process of its development, thus affording the possibility for the wider use of commodity-value forms in the national economy. The limits to the use of supply-and-demand relations are objectively determined under socialism by the level of production. Thus, a more limited application of such value levers as supply and demand is necessary in branches of production which lag behind in their level of development, because in such conditions these factors operate against the interests of the working masses and handicap the development of production.

The basic economic law of socialism requires that the system of direct distribution be extended in these cases instead of free sales. This applies both to the means of production and to articles of consumption.

In the case of the latter this may occur, for example, during the transition to rationing in special circumstances which cause a drastic reduction in the supply of consumer goods. This measure assures to the working people a definite guaranteed minimum of products at fixed state prices.

In the problem under consideration, just as in all the economic life of a socialist country, a tremendous role is played by the activity of the Communis Party and the Soviet Government which adopt decisions on fundamental questions of economic policy. For example, mistakes made in the management of agriculture during the first postwar years in connection with the personality cult, and disregard for the operation of the law of value, caused a serious lag in the development of this branch of production. On the other hand, the rapid economic progress observed in the last few years thanks to the timely and correct measures taken by the Party, and the gradual elimination of the scarcities of some articles, create the possibilities for the wider application of value relationships in the national economy by means of the consistent substitution of free sale for direct distribution (even though the latter may involve compensation in money form). This is bei successfully accomplished today.

It is confirmed by the measures taken in this direction in recent years, including: authorization of enterprises to sell unnecessary surpluses of equipment and materials; reorganization of the machine and tractor stations and the sale of agricultural equipment and implements directly to the collective farms; transition to the system of state purchases of agricultural products; the transfer of intra-collective farm relations to a monetary basi and other measures.

Specialization of agricultural production, its gro ing marketing potential and cuts in production cost tend to broaden the sphere for the operation of supply-and-demand relations in agriculture on the basis of substitution of the commodity-value form fo payments in kind. This creates a sound economic foundation for price reductions and for the fuller satisfaction of the population's demand for farm products.

The economic importance of the wider use of ommodity-money forms and of supply-and-demand elations within the state sector, and in the transctions between state industry and the collective arms involving instruments and means of producon, lies in the greater control on the part of the onsumer (which is the strictest and most effective orm of control) over the quality of the supplier's roduct. This control tends to raise the efficiency f production, to eliminate mismanagement and aste, to improve the quality of output and, in the nal analysis, to achieve a saving of social labor.

This transition entails certain losses in the initial eriod as a result of organizational shortcomings nd, especially, disturbances of the rhythm of work some of the farm machinery plants. For example, the Kherson plant producing corn harvester ombines had to turn out various secondary items roughout 1958 and the first half of 1959, because e KU-2 combine produced earlier was withdrawn rom production since it was not in demand among e collective farms, and the design and construcon of new machines which would meet the requireents of purchasers were prolonged. But these are e costs of growth which will unquestionably be mply compensated for by improvements in the qualy and efficiency of the new machines, with great enefit for the national economy.

The experience of the industry which supplies arm machines shows that it is already advisable to xtend the application of supply-and-demand relaons in the sphere of the circulation of means of roduction between state enterprises, as a suppleent to the plans for material and technical supply. his can be accomplished by extending direct concts between the producing enterprises and the nterprises which use their output. Such a measure ill improve the economic operations of enterprises nd of industry as a whole. Elimination of the probem of supplying metal to enterprises in the process f fulfillment of the Seven-Year Plan will make this easure urgently necessary and at the same time ill lighten the job of implementing it.

The current process of more widely applying comodity-value forms and the supply-and-demand retions inherent in them in the socialist economy, volves restricting the use of administrative methds in the planned management of the national econmy and replacing them by flexible and effective conomic stimuli, by value levers which exert a ore stimulating effect on the quantitative and qualitive development of socialist production, leading to better and fuller satisfaction of the requirements the population. However, this does not presupse in the least that the spontaneous operation of e law of value, and of the associated spontaneous arket elements, should be adopted as regulators of the socialist economy, as advocated by revisionists in some of the People's Democracies (see, for example, the works of the Polish authors I. Popkiewicz, Real Profitability, and S. Kurowski, The Market and Planning).

Under socialism the development of the economy, based as it is on public ownership of the means of production, is consciously regulated by society with knowledge of objective economic laws. In these circumstances the operation of the law of value and of supply-and-demand relations bears a subordinate and auxiliary character within the limits consciously allocated to them. Under socialism supply-and-demand relations are not the only form of relations between production and consumption and still less are they the basic form (as under capitalism); they play an auxiliary and subordinate role, although a very important one.

The expansion of the sphere of commodity-value and supple-and-demand relations is a process which will continue in our economy until an abundance of all products is attained, which is one of the most essential conditions for the transition to the higher phase of communism where the need for commodity-value relations will be obviated and they will disappear.

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The time is not long past when the concept of production was identified in our economic literature with supply, and of consumption with demand; this was a theoretical mistake.

While demonstrating in his investigations the universality of the relations between production and consumption on the one hand, and supply and demand on the other, in an economy based on commodity production, Karl Marx at the same time objected to equating them directly. He wrote that in commodity production and exchange, supply-and-demand relations place production and consumption face to face, not directly but in the final analysis, (1) and that supply-and-demand relations include the relations between production and consumption. (2)

Qualitative and quantitative distinctions between the above categories remain under socialism, although their economic significance and social essence change.

Let us consider each of these categories.

Taking supply to begin with, we find that so far our economists have not payed sufficient attention to an analysis of this concept. In our economic literature, supply has often been tacitly identified with production. Some authors compare production and demand, rather than supply and demand. (3) While claiming to base themselves on the determining role of production, they are in reality making a methodological mistake inasmuch as they are operating with qualitatively different social forms which also take on different quantitative expressions.

The basic qualitative distinction lies in the fact that while production and consumption are categories characteristic of any method of production, supply and demand are connected exclusively with commodity-value relations which bear an historical character. Supply definitely presupposes distribution through exchange, through commodity circulation, rather than direct distribution of products. As for the quantitative differences, which are closely connected with the qualitative distinctions, they stem from the varying factors which exert their influence upon each of these relations.

Whereas the production of consumer goods depends upon the level of development attained by the productive forces at a given stage of socialist construction, upon the division of social production into departments I and II, and directly upon the volume and composition of department II, supply, in addition to its dependence upon the level and composition of the produced mass of consumer goods, depends also upon the division into marketable and non-marketable products and reserves, and also upon the division into products for individual and social consumption. Furthermore, supply also depends substantially upon the condition of foreign trade, upon the level and relations of prices, and upon a number of other factors.

The enumerated conditions affect commodity supply in varying degrees and in varying directions. The development of socialist production is a factor which determines the volume and composition of supply. But while the rapid development of production in our country — including the growing output in industries which produce consumer goods — the decline in the share of non-marketable consumption in connection with the reduction in the strength of the armed forces, the growth of foreign trade, the development of transport, the specialization of agricultural production, the improvement in the system of purchase prices, etc., tend to raise the volume and improve the composition of the supply of consumer goods in the USSR, there are also factors which tend to bring about a relative decline in commodity supply. The latter include primarily the rapid growth of a part of the social consumption funds designated for satisfying the requirements of the population outside the sphere of supply and demand. These funds are used for providing the working people with free medical service, education and vocational training, for accommodating them in sanatoria and rest homes free of charge or at a reduced cost, for the maintenance of children's institutions, homes for the aged people, etc.

Expenditure on social and cultural services hav
grown in our country from 32 billion rubles in 193
to 230 billion rubles in 1959. They are slated to g
up to 360 billion rubles in 1965. The rates of
growth of these expenditures exceed the growth of
wages and salaries. Their share in the total expe
ditures of the state budget is rising steadily.

This does not include state expenditures on indu
trial sanitation (as much as 13.5 billion rubles wer
spent on the provision of work clothes free of char
in 1956-1958 (4)), on housing construction and mai
tenance. Apartment rent, which is very low in the
USSR, covers only a small fraction of the expendi-
tures on housing maintenance and construction.

The growth of such expenditures from the socia
fund is a natural development in the socialist society, a development which tends to grow with the
approach to the higher phase of communism. Kar
Marx anticipated this when he wrote that under so
cialism the share of the national income designate
for the common satisfaction of requirements "will
grow steadily, along with the progress of the new
society." (5)

Effective demand under socialism may be defin
as the value expression of that part of the require
ments of the population for consumer goods and
services which is realized in commodity form.

A most important feature of effective demand u
der socialism as compared with capitalism lies in
the fact that socialism, by destroying exploitation
of man by man, has done away with the sources of
non-labor incomes, as a result of which effective
demand has ceased to reflect antagonistic relation
Labor has become the sole source of the effective
demand of the population. The demand for article
of consumption is determined by plan on the basis
of the law of planned, proportional development, i
accordance with the requirements of the basic eco
nomic law of socialism. Accordingly, the growth
of requirements on the basis of the development o
production is accompanied under socialism by increases in effective demand, both as the result of
price reductions and also as the result of increas
in the money incomes of the population, and conse
quently by the better satisfaction of these require
ments. Under capitalism, on the other hand, the
growth of production leads to the better satisfacti
of the requirements of the exploiting minority onl
while the working people are abandoned to the
mercy of the law of absolute and relative impover
ishment.

This, however, does not mean that the requirements of the workers do not grow under capitalis
as some authors would have us believe. (6) In ou
opinion this is a theoretically incorrect conclusio
which is at variance with the real facts. The root

f this mistake lies in disregarding such a factor in he process of development of the requirements of he working people as the growing intercourse beween working people of town and country and beween people from different localities, to which eference was made by V. I. Lenin. (7) The develpment of production under capitalism is undoubtedy attended by the growth of the requirements not nly of capitalists, but of the workers as well. Technical progress impels the capitalists to pose igher demands with regard to the educational level f the workers. Capitalism has brought about greatr mobility of the population.

All this stimulates the growth of the working peole's requirements. Moreover, many requirements f the capitalists are not alien to the workers. (8) But the capitalist society lacks the social conditions ecessary for satisfying the growing requirements f the working people, in consequence of which even he minimum requirements (as, for example, the equirements of the many millions of unemployed nd partially employed workers) cannot be satisfied. Therein lies the economic foundation of the deep reentment of the working people against the boureois system and their deep urge to replace it by a more progressive, socialist system, under which all he working people receive equal opportunities for atisfying their growing requirements, for then the atisfaction of man's requirements becomes the direct aim of production.

The volume of effective demand in value terms quals that portion of the money incomes of the opulation designated for purchasing articles of onsumption and services realized in commodity orm. The magnitude of demand in monetary exression depends, consequently, on the total amount f money incomes and on the amounts spent by the opulation on the payment of taxes, various other ayments, non-commodity services, etc. The magitude of demand also depends on the volume and ature of the population's savings.

The real volume of demand depends, in addition, n the level of prices of consumer goods and on harges for material services rendered in commodity form.

The basic money incomes of the population of the USSR assume the following forms: 1) wages and alaries of personnel employed in the productive nd non-productive spheres of the state sector; 2) ncomes of collective farmers and of members of arious cooperatives received as shares of the common income and in the form of money; 3) stipends, ensions, benefits, etc.; 4) other incomes of the opulation, such as winnings on state loan bonds and ottery tickets, interest paid on savings accounts, tc. These incomes are partially redistributed among different groups of the population as the result of market sales of surplus farm products received by the collective farmers in accordance with the number of workday units and from their auxiliary household plots, or by workers and employees from their personal plots, and also from the sale by individual peasants and non-cooperative handicraftsmen of the products of their personal labor and small-scale production.

The total payroll is growing in the USSR both as the result of the increase in the number of working people and in average earnings. The number of workers and employees in the USSR has grown from 27 million in 1937 to almost 55 million in 1958; a further increase of about 12 million workers, or 22% above 1958, is due to take place during the Seven-Year Plan period. The growth in the number of employed personnel was attended by increases in average wages. Average earnings in industry have increased by 24% between 1950 and the end of 1958 alone. (9)

A most favorable factor is the wage and salary increases granted in recent years to the lower-paid brackets. Further increases are provided for in the Seven-Year Plan; they will bring the minimum wages and salaries up to 500 to 600 rubles in 1965, as compared with 270 to 350 rubles at the beginning of the seven-year period. Growth of collective-farm production raises the incomes of the collective farms and of their members.

On the basis of the growth of collective farm production, the incomes of collective farms and farmers are increasing. Money incomes of collective farms in 1960 will be about 154 to 158 billion rubles, i.e., about 3.5 times the 1953 level, and thus the money payments to collective farmers per workday unit will have risen more than 3 times. (10)

In addition, the population of the Soviet Union is receiving benefits in amounts which are growing from year to year. Between 1937 and 1959 expenditures on pensions and various benefits have increased 19 times.

Income taxes make up a comparatively small item in the state budget (7-8% of its receipts). Acting on the report of N. S. Khrushchev, the Supreme Soviet of the USSR passed a law at its Fifth Session which provides for the gradual abolition of income taxes beginning with October 1960 and ending with 1965. This should raise the purchasing capacity of the population by about 74 billion rubles annually by 1966. (11)

As already mentioned above, expenditures for rent are very low in the USSR. Although demand is much higher than supply in this sphere, and although the municipal services are constantly being improved and extended, rent in state-owned houses remains unchanged. The state also regulates the rent charged by private house owners, and the successful fulfillment of the vast housing construction program will bring about a radical and final solution of this problem as well.

Consequently, under socialism the basic factors which affect the effective demand of the population promote its rapid growth, as a result of which the portion of the social product designated for personal consumption can be realized entirely unhindered, and this is one of the essential conditions for the uninterrupted continuation of the process of expanded social reproduction.

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Much attention has been paid in our press in recent years to the problem of the relationship between supply and demand under socialism. Some writers persist in adhering dogmatically to the formerly current idea that it is allegedly a law of socialism that effective demand (or even consumption) must grow at a faster rate than production. This view was sharply criticized during the discussion.

Opponents of this dogma have pointed out, justifiably and convincingly, in our opinion, that its supporters incorrectly equate the concepts of "requirements" and "effective demand," and that recognition of this dogma would amount to insisting that under socialism there must inevitably be a scarcity of goods with all its consequences, such as queues, speculation and, as a result of these factors, breaches of the principle of distribution according to work, weakening of the incentives to higher labor productivity, improved quality and wider assortment of products. Supporters of this dogma treat as a natural development a situation caused by difficulties associated with concrete historical and economic conditions attending the construction of socialism in our country.

A correspondence between demand and supply is normal under socialism. The need for sustaining this correspondence stems from the objective law of planned, proportional development of the national economy. Comprehensive balance is a law in the planned, socialist economy, and any disproportion, including a disproportion between supply and demand, is a violation of this law which must be eliminated.

Correspondence between supply and demand is assured when the supply of goods is invariably available in a volume and composition adequate for meeting fully and uninterruptedly the effective demand of the population. A planned economy makes it possible to establish the most favorable relationship between them, one which does not permit the development of any scarcities or surpluses of goods. As for the determination of the concrete amounts of goods necessary to accomplish this in each given period, this is a problem which can be solved by means of technical and economic calculations.

Nevertheless, the operation of this law depends upon existing historical economic conditions and upon the concrete tasks undertaken by the country at a given stage of socialist construction.

Concrete conditions of socialist construction in the USSR made it impossible to achieve harmony between supply and demand in the period of transition from capitalism to socialism. But the industrialization of the country and the collectivization of agriculture accomplished in that period brought about the rapid growth of the population's effective demand and created the necessary conditions for satisfying this demand to a constantly greater degree.

In the People's Democracies the transition from capitalism to socialism took place in incomparably more favorable conditions than in the USSR, thanks to the existence of a powerful, economically advanced socialist country, the Soviet Union, and of the powerful socialist camp, the equal members of which are practicing mutual assistance in all spheres. As the result of this unselfish mutual assistance we have, first of all, the process of relatively rapid equalization of their economic and cultural levels stemming from the higher rates of growth in the formerly backward countries as compared with the progress of the socialist system as a whole; second, a certain contraction of the gaps between the rates of growth of the production of the means of production and of consumer goods, as compared with that in the USSR during the period of transition from capitalism to socialism; third, possibilities for certain changes in the relationship between the accumulated portion of the national income and the portion designated for consumption by raising the share of consumption, as compared with that in the USSR. The result is that there is the possibility of rapidly satisfying the physical and intellectual requirements of the population in the People's Democracies in the form of commodity supplies as well as through various non-commodity services.

Already in 1956-1958, i.e., even before the end of the transition period, the People's Democracies surpassed many economically advanced capitalist countries in the per capita consumption of the most important foodstuffs. By 1958 they also achieved an equilibrium between the total volume of consumer demand and commodity supply in the markets of most of the socialist countries.

A major advance toward the establishment of a correspondence between supply and demand after the end of the transition period in the USSR was rovided for by the Third Five-Year Plan which enisaged an increase of 50 to 100% in public consumpion as the result of a 172% increase in the output of onsumer goods. (12) However, the fulfillment of his plan was interrupted by the outbreak of World Var II and the attack of the fascist hordes on the JSSR. The war brought about a decline in the output of consumer goods by 410 as compared with 940, and a reduction in the share of market funds n commodity production, with the result that the xcess of consumer demand over supply became till greater.

The need for rapid postwar restoration of the naional economy, and of heavy industry inthe first lace, and the mistakes committed in the managenent of agriculture and in the sphere of technical rogress stemming from the personality cult, handiapped the development of production of consumer oods and the achievement of a balance between upply and demand.

A factor of decisive importance in the eliminaion of disproportions between supply and demand, nd in the further improvement of the living standrds of the people, was the successful program rawn up by the Party and the Government for a harp rise in all branches of the national economy nd the development of socialist production relaions launched in 1953. Fulfillment of this program aised the national income between 1953 and 1958 y 62%, whereas in the USA the corresponding inrease in the same period was no more than 7%. 13)

As the result of greater output of consumer goods nd increases in the money incomes of the populaion, the Soviet Union was able to satisfy more fully s effective demand; this was mirrored best of all n the rapid growth of retail sales and in improvenents in their composition. Thus, the increase in etail sales between 1951 and 1955 averaged 6.7% a ear, while in the next three years (1956 to 1958) his average amounted to 9.6% a year (in comparale prices). (14) Moreover, the rate of growth of etail sales in the villages was much higher than n the cities and in the country as a whole. As a esult, the share of village trade in the general volme of retail sales throughout the country increased rom 23% in 1940 to 24.1% in 1950, and to 29.1% in 958. (15)

The ultimate result of the measures carried out n the country in the last few years was the inrease in the real wages of workers and employees counting benefits and other state payments) by 45% etween 1940 and 1959, and real incomes of the peasnts — by 64%. The level of consumption of the ntire population increased on this basis. In 1949, s compared with 1953, per capita consumption had increased in the USSR as follows: meat and lard by 27%, milk and dairy products by 40%, eggs by 44%, fish by 29%, and sugar by 37%. (16) A considerable increase was registered in the consumption of clothing, shoes and, especially, durable goods.

Some idea of the increasing satisfaction of the essential requirements of the working people may be gleaned from the figures on the growth of deposits in savings banks: (17)

Years (end of year)	Number of accounts (in thous.)	Amounts deposited (in million rubles)
1940	17,346	7,253
1953	26,950	38,649
1958	47,009	87,186

The above figures indicate that the overwhelming majority of families in the USSR keep accounts in savings banks, whereas in the USA, according to American statistics, 26% of the families had no savings whatever at the beginning of 1959 (18) and almost all American families are burdened with debts under consumer credit arrangements. Furthermore, the growing deposits in Soviet savings banks are indicative of the existing possibilities for still greater increases in the volume of domestic trade.

A new stage in the economic development of the USSR was ushered in by the 21st Extraordinary Congress of the CPSU which endorsed the control figures for the development of the national economy of the USSR in 1959-1965. Part of the long-range economic program for building communism in the USSR, the Seven-Year Plan, which gives priority to the development of heavy industry, provides for using the latter as a basis for a considerable increase in the production of consumer goods, in order "thus to advance far ahead toward the solution of the problem of the full satisfaction of the uninterruptedly growing material and cultural requirements of the Soviet people." (19)

Overfulfillment of the plans for the first and second years of the seven-year period enables us to solve ahead of schedule the problem ofmeeting in full the effective demand of the population. "We have at present adequate resources of goods for meeting the effective demand of the population," (20) declared N. S. Khrushchev in his report to the meeting of the Supreme Soviet of the USSR on May 5, 1960.

In these conditions the problem of ensuring the correspondence not only of the volumes of supply and demand, but also, and what is most important, of their composition, acquires primary importance. We have not yet provided a satisfactory solution to this problem, and this is reflected in the results of our trade.

Characteristic in this respect are the figures given in the following table on the uses of goods delivered in 1957-1958 (in billion rubles). (21)

Retail trade turnover				Deliveries over and above planned trade turnover				
					Including amounts used:			
					For plan overfulfillment		For increasing stocks of goods	
Years	Plan	Actual fulfillment	Deliveries of goods	Total	amount	share of %	amount	share of %
1957	597	616	620	23	19	82.7	4	17.3
1958	658	667	679	21	9	42.9	12	57.1

As the table shows, the trade turnover plan was surpassed in both years, but while 82.7% of the goods received over and above the planned trade turnover was used for this purpose in 1957, in 1958 this percentage dropped to 42.9, i.e., by almost 50% compared to 1957, as the result of a corresponding increase in the share of goods used to build up stocks, which on January 1, 1959 were already somewhat above the established quotas.

This tendency toward the increasing growth of stocks of goods in the trading network became still more pronounced in 1959, with the result that the trade turnover plan in the first half of the year fell short of fulfillment by more than 5 billion rubles, while the carry-over deposits in savings banks increased in the same period by 7 billion rubles, an amount greater than the total for the whole of 1958. During the second half of the year the gap in the fulfillment of the planned trade turnover increased to almost 25 billion rubles, with the result that the annual plan (without the trade on commission done by the consumers' cooperatives) was fulfilled in 1959 only to the extent of 96.7%.

The obstacles to the fulfillment of planned sales, notwithstanding the adequate resources of goods and the high effective demand, are explained by the considerable changes which have occurred in the composition of demand and in the delayed reaction of supply to these changes.

The essence of the changes which have taken place (and still are taking place) in demand lies in the fact that the center of gravity has shifted from quantity to problems of quality in the broad sense of the word. What we are witnessing here is the operation of the law of increasing requirements of the population under socialism on the basis of a rapid growth of production and money incomes of the working people, and also as a result of the rising cultural level of the people and the growth of various forms of social intercourse. A concret manifestation of this law lies in the given case in the demand of shoppers for improved quality, richer assortment and composition of goods.

Of major importance for ensuring a balanced supply and demand for consumer goods is the decision adopted by the Central Committee of the CPSU and the Council of Ministers of the USSR in August, 1960, "On Measures for Further Improvement of Trade." (22) Along with other measures, it provides that plans for the production of consumer goods by industrial enterprises are to be approved on the basis of the orders placed by trading organizations and of the contracts conclude with them by industry. Trading organizations may not accept from the industrial enterprises goods manufactured in violation of the orders received from these organizations; industry is prohibited from ceasing the production of specific goods without consulting the respective trading authorities.

In order to enable industry to fill the orders of the trading organizations it is necessary to ensure deliveries of materials and semi-finished goods t the industrial enterprises in strict conformity wit the orders received from them, and not on the basis of a mechanical distribution. For example, th garment factories will not be able to produce the required clothing if the textile mills fail to supply the needed fabrics. Furthermore, the technical equipment of factories should be improved in orde to make it easier for them to switch over rapidly to the production of newly designed stylish garments whenever that is required by a change in demand.

With the increase in the volume of supply we must definitely change over from distribution to free purchases and sales for a constantly increasing range of goods. The experience available in this respect shows that this form ensures the most favorable conditions for creating and sustaining conformity between the compositions of supply and demand.

Naturally, all these measures will yield the desired effect only if the trading organizations know the nature of consumer demand, both in detailed composition and according to concrete regions of the country.

It is precisely inadequate knowledge of existing demand that is the weakest point in our trade. It accounts for serious mistakes made in planning deliveries of goods, with a resulting surplus of goods in some localities and scarcity in other localities. Mistakes in the orders and requests for goods submitted by trading organizations indicate that the study of demand is limited in the main to observation without analysis and, what is most deplorable, without sound quantitative calculations, which are often replaced by arbitrary estimates.

There are a number of reasons for this, the main one being the absence of adequate statistical reports for studying demand, for determining the volume of demand for specific goods, and the prospects for the development of the volume and composition of demand. A considerably wider range of scientific research and statistical observations will be required to eliminate this; they should be based on the following approximate program.

Thus, one of the essential conditions for an effective study of demand is a broad base of demographic statistics. Rich materials on this question were obtained as the result of the population census taken in 1959. But this is just a beginning. There is apparently a pressing need for a special institute which would conduct a systematic and profound study of demographic problems. There is also considerable room for improvement in our budget statistics. Budget investigations conducted by the Central Statistical Administration of the USSR should cover all branches of the national economy, and the range of indices should also be extended considerably; budget groupings according to incomes should be set up so as to represent the actual distribution of the country's population according to these groups.

Greater attention should be devoted to the elaboration of scientific principles of consumption, the study of which has been successfully initiated in our country. This includes the development of more differentiated scientific standards of nutrition for specific economic areas (and not only for republics), and for groups of the population, depending upon incomes per person. The latter would be rational standards, minimum, maximum and average, corresponding to their economic (along with their physiological) content. The first steps have been taken in the USSR toward determining rational standards of consumption for the main goods other than foodstuffs. Successful headway in this direction should greatly lighten the study of the composition of demand and ways of influencing it.

It often happens that failure to satisfy demand stems from the fact that garments, shoes and other articles are not delivered in the required sizes; this leads inevitably to losses of social labor. This can be prevented only by an adequately extensive organization of antropometric studies with the object of providing the basis for satisfying the demand of the population for consumer goods in the necessary sizes, with differentiations according to regions of the country. Accordingly, the necessary corrections can be introduced in the production programs of the enterprises of light industry.

Results of the studies of demand depend largely upon the use of mathematical methods and modern computing machines. Of great value in this respect are calculations for determining the dependence of the demand for specific goods (with due account for the existing volume of supply) upon changes in incomes and price levels. In order to obtain sufficiently reliable and complete data on the movement of a wide assortment of goods in the sphere of circulation, which is one of the most important sources of material for studying demand, it is necessary to equip the trading organizations with rapidly operating computing machines. This implies that, beginning with sample studies (with respect to the number of enterprises and commodity groups), we shall go over subsequently to a complete accounting of all deliveries, sales and inventories of goods covering a wide range of assortment indices in the trading network as a whole.

The results obtained on the basis of this expanded program of observations and studies of demand should make it possible to elaborate scientific methods of studying demand.

The importance of the proposed program goes beyond satisfying the current requirements of our growing economy, because the methods and organization developed for the study of demand will furnish the basis for the gradual development of enentirely new forms of recording the requirements of the members of the communist society.

Footnotes

(1) See Karl Marx and Friedrich Engels, *Soch.*, Vol. 4, p. 79.

(2) "If the relations between supply and demand are understood in the broader and more concrete sense, they include the relations between production and consumption" (Karl Marx, Teorii pribavochnoi stoimosti, Part II, 1957, p. 510).

(3) See S. Sitarian's article "Production and Effective Demand Under Socialism," in Izvestiia Akademii Nauk Armianskoi SSR, 1956, No. 11, pp. 17-28; A. Cherniak and A. Stanislavskii "Effective Demand and Production Under Socialism," in Partiinaia Zhizn, 1956, No. 12, etc. In our opinion, a correct treatment of this problem is found in B. I. Gogol's article, "Relationship Between Supply and Demand in Socialist Society," Sovetskaia Torgovlia, 1957, No. 3.

(4) Materialy vneocherednogo XXI s'ezda KPSS, Gospolitizdat, 1959, p. 179.

(5) Karl Marx and Friedrich Engels, Izbr. proizn. v dvukh tomakh, Vol. II, 1948, p. 13.

(6) "In capitalist society the growth of the productive forces does not lead to the growth of the requirements of the working people" (F. Piankov in his dissertation "Production and Consumption Under Socialism," Moscow, 1954).

(7) See V. I. Lenin, Soch., Vol. I, p. 90.

(8) See Karl Marx, Kapital, Vol. II, 1955, p. 411.

(9) Pravda, November 23, 1959.

(10) Pravda, May 6, 1960.

(11) ibid.

(12) KPSS v resoliutsiiakh i resheniiakh s'ezdov, kovferentsii i plenumov TsK, Part II, 1953, pp. 885-886.

(13) Narodnoe khoziaistvo SSSR v 1958 godu, 1959, p. 97.

(14) The author's calculations are based on statistics from Sovetskaia Torgovlia, 1956, p. 20, and materials of the Ministry of Trade of the USSR.

(15) Narodnoe khoziaistvo SSSR v 1958 godu, p. 707.

(16) N. S. Khrushchev's report to the Session of the Supreme Soviet of the USSR on May 5, 1960, Pravda, May 6, 1960.

(17) Narodnoe khoziaistvo SSSR v 1958 godu, p. 915.

(18) Kommunist, 1959, No. 11, p. 100.

(19) Materialy vneocherednogo XXI s'ezda KPSS, Gospolitizdat, 1959, p. 195.

(20) Pravda, May 6, 1960.

(21) The authors calculations are based on the following sources: Narodnoe khoziaistvo SSSR v 1958 godu, pp. 699, 744; materials of the Ministry of Trade of the USSR.

(22) Pravda, August 9, 1960.

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S. TURETSKII

Problems of Distribution and Price Formation

The level of and changes in prices depend not only on the conditions of production that influence the value of output, but to a considerable extent also on the conditions of distribution and other factors linked with the monetary form of production and circulation costs. This stems from the fact that prices do not reflect the expenditure of socially necessary labor directly, but are the monetary expression of value. The growth of social labor productivity and the reduction in the value of goods are the source and decisive factor in the decrease of prices. However, they do not lead to this decrease automatically. As an analysis of the change in the level of production costs and prices over a period of almost forty years (from 1922 to 1960) reveals, changes in prices have corresponded more closely to changes in production costs and far less to changes in the social costs of production, although it is the latter that determines the level of prices.

The influence exerted by the relations of distribution on the level and dynamics of prices is closely bound up with the increase in the workers' incomes, which means that part of the economies achieved through the reduction of value are used to increase the consumption fund. It is because of the rise in money incomes that the reduction of production costs and prices does not correspond to the reduction of value. The fact that the rate of growth of labor productivity is faster than that of wages means that part of the social labor saved is distributed and used to increase the incomes of people engaged in the sphere of material production (primary incomes).

The relations of distribution affect not only the retail prices of consumer goods, but also the costs and wholesale prices of the means of production. In the final analysis, the sum of prices of the means of production used, say, in machine-building replaces the wages paid earlier to workers in the coal, ore-mining, metallurgical, timber and other branches of heavy industry whose output is used for manufacturing machinery, and the profits made in these branches. Moreover, wages in heavy industry are higher than in consumer goods industries. In the branches manufacturing means of production for capital goods industries (chiefly implements of labor), wages are higher than in those producing means of production for consumer goods industries. Wages in industry are much higher than in agriculture. The relative importance of low-paid workers is still considerable in the light and food industries, and particularly in agriculture.

These differences in wages reflect the differing complexity of individual types of labor, different levels of skill. At the same time they include supplements which stimulate the planned distribution of social labor among the various branches and areas in accordance with the requirements of social production. An appropriate wage structure, for instance, attracts workers to the coal, metallurgical and chemical industries, to power stations, and also to remote parts of the country, especially for the branches of heavy industry. Given full employment under socialism, the level of wages is also influenced by the necessity of stimulating people to acquire new professions and specialties, both of which are constantly engendered by technological advances. The planning of wages thus helps to solve many important problems of the manpower balance. The substantial differences in wages are the consequence of historical factors and will gradually be evened out. However the differences in wages stemming from differences in complexity of the work done will prevail until the highest phase of communism is achieved. The possibility of systematically establishing a level of wages with due regard for production and distribution factors is determined primarily by the fact that under socialism labor power is not a commodity. The planned distribution of the national income makes it possible to concentrate on substantially increasing the wages of low- and medium-paid workers, which is the only way of evening out the wages of the different categories of workers in socialist conditions. Therefore, differences in the remuneration of labor reflect not only the differences in the complexity of the work done but also the relations of distribution and redistribution of the consumption fund and, partly, of the accumulation fund.

Higher labor productivity in heavy industry ensures a relatively greater magnitude of the newly created product, but not always (and not automatically) a higher rate of surplus product. The latter depends not only on labor productivity, but also on the division of the newly created product into necessary and surplus product, on the level of the wages. Therefore, to judge the degree to which prices deviate from value merely on the basis of data on the share of profit in the price, or on the ratio of profit and turnover tax to the value of fixed and circulating capital, or to the sum of wages paid, means to see phenomena only superficially. Attempts to determine the value of different types of products by summing production cost and average profit (the price of production), or according to the surplus product calculated on the basis of a single rate, by no means reflect the whole complexity of economic phenomena and the processes characterized by value categories.

Bringing prices closer to value is a natural tendency in the perfection of the price system under socialism. (1) However, it is not due only, and not so much, to the level of profit, particularly to a single rate of profit (or a single rate of surplus product). The elementary condition for translating this tendency into reality is, of course, the elimination of losses incurred by certain branches of the economy, the need to cover economically substantiated average branch production costs by wholesale prices and the achievement of profitability in all branches. But this is by no means all there is to the tendency of prices to approach value. This tendency is also closely bound up with the elimination first of excessive and then of substantial differences in the wages paid to the different categories of workers in different branches and parts of the country. This process is probably much more complex and drawn out than the elimination of the present economically unsubstantiated variation in the profitability of enterprises producing different types of output. (2)

It should be pointed out that the uneven level of profitability in different branches, especially in heavy industry, and the losses sustained in recent years by certain branches (coal, ore-mining), stem not so much from uneven changes in the value of their produce, as from increases in wages. (3) Differences in profitability may also be explained by the fact that while production costs have decreased unevenly, wholesale prices in all branches of heavy industry have remained unchanged in the past six years. This is the reason, among other factors, for the excessively high profits in many branches of the machine-building, chemical and other industries.

Characteristically enough, many economists limit the discussion of the price formation issue to that of evening out profits or the surplus product m. In addition, the authors of mathematical formulas, devised to determine the value of individual commodities, proceed from the need to "reconstruct" m while at the same time keeping the sum $c + v$ unchanged or almost unchanged. The relations of distribution on which v depends are usually ignored, although they exert an influence on all the other price-formation elements.

Price cannot help but reflect relations of distribution. If it does not, it is no longer a price, no longer the monetary (and not direct) expression of value. It is no accident that economists who ignore the influence exerted by relations of distribution on prices, and the role of prices in the planned distribution of the national income, adhere to the computational (*schetnoi* — trans.) treatment of prices under socialism. This is not denied by the proponents of the price of production concept (I. S. Malyshev, V. A. Sobol, L. A. Vaag and others), but is concealed by those who want to equate the prices of goods with their value, as well as by D. D. Kondrashev, the author of the "buffer" concept of prices under socialism.

It is altogether natural that the basis of planned price formation is economically substantiated production costs, that is, monetary expenditures on materials and on the wages of personnel in producing enterprises.

This by no means detracts from the importance of the level of profitability in determining the planned prices of diverse commodities. But must the sum of profits and turnover tax in each branch be equal to the monetary expression of the surplus product created in it? Even if we agree to this, in establishing the profitability of various items through the distribution of the whole sum of profits and turnover tax proportionally to wages (or to the sum of workers' incomes) in the corresponding branches of material production, we should take into consideration the influence exerted by the relations of distribution on both c and v. To ignore this (whatever may be the method of computing expenditures) would be to abstract ourselves from the real phenomena and processes engendered by the requirements of a number of economic laws of socialism and not only of the law of value.

What is more, the "evening out" of profits proportionally to wages will be of advantage financially to the labor-consuming branches and those with a low level of labor productivity. The "evening out" of the rate of profit in relation to productive capital will inevitably engender a tendency toward an unjustified increase in capital investments and an increase in the value of fixed capital (the most profitable will then be the "capital-consuming" industries). Both methods of "evening out" profits will lead to unjustified increases in prices, dislocation of proportions, disturbance of price relations and a reverse change in the scale of prices. The question one may well ask is, will this accelerate our country's advance to communism? For it is only from this standpoint that any economic reform can and should be assessed.

Even if we assume that it is possible to determine the magnitude of the value of the surplus product created in every branch, does it follow that this magnitude m should be incorporated in the price of the given type of product? That would by no means ensure the determination of the value of each commodity. Moreover, under socialism there is no objective need for the repeated realization (in the price of each type of product) of that part of the surplus product which is intended for the maintenance of the unproductive sphere. However there is no question that expanded reproduction in all the branches of material production should be ensured. That is why wholesale prices in industry should cover economically substantiated production cost in each branch and ensure the accumulation necessary for increasing fixed and circulating capital. This price reflects the real expenditures on the reproduction of output in a given branch and is, as it were, a "restoration" value. This, as a rule, determines the lower limit of the level of wholesale prices in each branch of industry.

There are possible exceptions to this rule, of course. The point is that the price should not only assure normal conditions for reproducing the output of each branch of production. The prices of means of production, which serve as a medium in the exchange of activities, should also influence the formation of the required structure of productive consumption (the rational utilization of the means of production) to ensure correct relations between the production and consumption of the various means of production. This explains the relationship between the price levels of the interconnected and interchangeable means of production. Hence also the possibility of there being a relatively higher or lower share of net income in the wholesale price as compared with the magnitude of the funds used for accumulation in the given branch. The amount of capital invested in a given branch may be greater or smaller than the value of the surplus product realized here.

Consequently, the magnitude of accumulation ncorporated in the wholesale price of the means of roduction (in the sum of the necessary accumulaion in a given branch) reflects relations of distribuion. But the latter also influence other elements of he price (c and v), as well as the price as a whole. Vhatever may be the conditions, the wholesale price, qual to the economically substantiated production osts plus profit (in the amount necessary for acumulation), reflects the real expenditures required n a given branch in accordance with the planned, roportional development of the national economy as whole. On the other hand, an equal rate of profit n relation to fixed and circulating capital in each ranch has nothing in common either with the magniude of the surplus product actually created here or vith the amount of accumulation really necessary in his branch.

Under capitalism the average (or monopoly) profit s essentially a mechanism of the spontaneous disribution of surplus value; it determines the scale of ccumulation in a given branch and the magnitude of arasitical consumption by the capitalists. The axes levied on capitalist profits do not and cannot erve to redistribute accumulation among the branhes of industry. In addition to the surplus value ealized by some capitalists in the form of profit, nother source of capital investment and the main ource of the vast expenses on armaments is the unearable taxes and levies collected from the working nasses. It is with these funds also that durable intallations (hydropower stations, etc.) are built. hey later become the property of the capitalists, vho find it unprofitable to invest funds in such intallations. Capitalist redistribution is thus of a urely class character and is implemented at the exense of the working people and in favor of the boureoisie.

Therefore there are no grounds for using the speifically capitalist form of conversion of surplus alue under capitalism and the mechanism of sponaneous price formation in the socialist economy. uch a mechanism of distribution and utilization of et income is alien to the socialist economy. Ineed, the huge sums invested in the past in the coal ndustry can ensure it, given an average rate of prof, an amount of profit far exceeding the amount of apital investments needed now, when there has een a planned change in the structure of the fuel alance. The oil, gas and chemical industries will nd themselves in a completely different position. his system of automatic price formation would astly expand the processes of redistribution through ne state budget and, consequently, would increase ne dependence of many branches of industry and nterprises on the state budget.

The average rate of profit, like the average rate of surplus product (supposedly reflecting the value of the surplus product created in each branch), would only lead to the unnecessary complication of the financial redistribution of accumulation funds among the branches of industry.

The elimination of losses in all branches and the abolition, on this basis, of budget subsidies are important steps toward strengthening cost accounting and the finances of the branches, toward strengthening the role of the ruble in the economy. But this is not all. A special form of subsidy is the systematic allocation of funds from the state budget to certain state enterprises to cover inadequate financial resources (over and above realized profit) needed to expand production. In setting wholesale prices with due regard for the accumulation required by individual branches, the need for redistributing funds among the branches of industry, Union Republics and economic areas through the state budget still remains. Financial and economic autarchy is just as alien to socialism as is automatism in price formation in any form.

As noted above, the achievement of correct price relationships requires the establishment of wholesale prices with a relatively small portion of profit in some branches, and a relatively high portion in others. An economically sound level of average production costs and profits in individual branches is the basis (but not the only one by far) for the establishment of a system of wholesale prices for means of production. The revision of wholesale prices, reflecting the tendency noted earlier for prices and value to be drawn closer together, does not at all mean that the price of each commodity should equal its value. It should also be pointed out that this tendency is not the only purpose of price revision.

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In the opinion of the proponents of the prices of production concept, under socialism the price of each type of output should serve as a criterion for the distribution of capital investments and the determination of their economic effectiveness. In this connection it should be pointed out that under socialism no rate of profit can serve as a criterion for the automatic distribution of the accumulation fund among the branches of industry, that is, as a regulator of production. The level of profitability can be a criterion of effectiveness (and, consequently, of distribution) of capital investments in branches manufacturing interchangeable products. But why is the rate of profit the most correct criterion in this case? Why is the profit on earlier capital investments (fixed assets) the factor which regulates capital investments in the future, when the level of economic effectiveness of expenditures has undergone a change and conditions have been created for new proportions in material production? After all, this effectiveness of expenditures is much better reflected by economically sound production costs, costs which reflect the influence of more advanced norms of expenditure of living and materialized labor.

In his book *Social Accounting of Labor and Prices Under Socialism* (Social and Economic Publishing House, 1960), and in an article published in *Planovoe Khoziaistvo*, 1961, No. 1, I. S. Malyshev holds that under socialism the index of effectiveness of capital investments is the difference between additional profits and additional capital investments. For additional capital investments save social labor, and under socialism the part saved is used not only to increase the surplus product, but also to raise wages. One should not forget the elementary truth that the portion of *m* (just like the portion of *v*) in price is the result of distribution; it is not given "by the nature of things."

The production cost as part of the price depends to a certain degree on the magnitude and period of replacement of fixed assets, the replacement of past capital investments. In the branches where the share of amortization in production costs is relatively high (oil and gas industries, hydropower stations, etc.), an increase in the rate of amortization causes a noticeable increase in production costs and this lengthens the period of recoupment, and vice versa. The proponents of the price of production concept hold that along with the replacement of past capital expenditures through amortization (through production costs), there is a need to ensure their replacement once again, in equal periods, through average profits at equal rates in relation to fixed capital. Here they confuse two different processes: replacement and accumulation, simple and expended reproduction. They also advance the theoretically invalid argument that all branches should replace, through profits, the value of fixed capital in identical periods, although in certain branches the actual wear and tear of fixed capital in this period comes to 10 to 15% and in others to 90 to 100%.

There can be no doubt that increasing the effectiveness of capital investments is one of the most important economic problems. But the method of prices of production and the average rate of profit by no means facilitates the solution of this problem. Moreover, it is theoretically invalid and confuses the problem. No less important is the task of increasing the effectiveness of the sum total of expenditures on the entire social product (*c* + *v* + *m*), including capital construction expenditures. In the final analysis the magnitude and rate of growth of capital investments depend on the amount of economies achieved in the process of production of the social product. That is why price should help to increase the productivity of social labor and decrease production costs. Its role cannot be limited to that of registering costs for determining what part of the social product is used for accumulation. There has long been a need to calculate scientifically at least the approximate amount of social labor expended on the production of individual products. Correct calculation of the labor expended requires the solution of the problem of reducing labor on the basis of a serious investigation of the category of simple labor and the degree of its complexity in different industries, and not on the basis of the data on differences in wages in various industries, as is done now. The possibility is not excluded of deriving a scientifically substantiated assessment of an hour of simple labor, and the preparation on this basis of a special auxiliary "price list" which will be of considerable assistance in the elaboration of many sections of the plan and in designing work. But such a "price list" can never become an actual price list, for this would mean limiting the role of prices to that of recording expenditures and denying other, no less important, functions of money under socialism; it would mean replacing money with "labor certificates" or "worker receipts."

In our opinion, Academician V. S. Nemchinov oversimplifies the problem of "the direct determination of the value of commodities as socially necessary expenditures of labor time." Asserting that all the difficulties of determining value may be easily overcome with the aid of modern electronic computing technique, he considers it enough, by solving an appropriate mathematical problem, to compute the full expenditures of labor time (in the optimal variant of the national economic plan). "By dividing the national income (in units of national currency) by an estimate of the material composition of the national income in units of socially necessary expenditures of labor time, we obtain the monetary expression of value." This "monetary expression of value" multiplied by the "optimal value of full expenditures of labor time in different branches and industries" is what V. S. Nemchinov calls exchange value. (4)

Here it is not only the problem of reducing labor that is completely ignored, but also all the problems connected with the monetary expression of value, with the factors lying both on the side of the commodity and on the side of money. It is not clear why the fraction whose numerator is the national income and whose denominator is the full expenditure of labor time expresses socially necessary expenditures, that is, measures of value.

Although V. S. Nemchinov rightly criticizes Malyhev's basic theoretical propositions in "substaniating" prices of production under socialism, it is ifficult to find any fundamental difference between heir concepts of calculating value. The difference ies in the technique of computation, but this does ot alter the essence of the matter.

Academician Nemchinov dissociates himself from he concept of prices of production and from equating he price and value of a commodity. But in suggestng "national economic costs of production which nly outwardly resemble prices of production" (5) s the basis of prices, he actually synthesizes both hese concepts. Recommending at first the method f computing exchange value as the "scientifically ubstantiated basis of price," he then regards the national economic costs of production," which are converted form of value, as the basis of price fornation. The connection between these two bases f prices is not revealed, but then there follows a omprehensive definition of "national economic costs f production," which are "equal to the average ranch production costs plus a part of the surplus roduct determined in proportion to the fixed and irculating capital on the basis of a single planned tandard of their utilization, and plus a part of the urplus product determined on the basis of planned tandards of differential rent." (6) But this is the ame price of production, true, slightly modified nd worsened inasmuch as the treatment of the cateory of differential rent under socialism as a preumably eternal category, one given by nature herelf, justifies a level of prices that reflects the vorst conditions of production. (7) One can well magine how sharply the implementation of this conept would raise the general price level, although its uthor claims the reverse.

One can agree with V. S. Nemchinov's assertion hat "prices can be brought closer to value on the asis of a certain revision of wholesale industrial rices provided that losses of enterprises and ranches are eliminated, and also provided that the ocially necessary expenditures on the development f all branches of material production are covered y the branch wholesale price." (8) Nor are there ny objections to V. S. Nemchinov's proposal to reuce retail prices as the value of consumer goods ecreases. But all this contradicts his concept of price ormation and is not a logical consequence of it; nor is is assertion that the planning of prices is not confined o mathematical formulas and must be "based also on an ppropriate price policy." (9) But it is not said here that oviet price policy does not simply involve a deviation of rices from value, but is a reflection of the requirenents of the economic laws of socialism.

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Although it is difficult at present to foresee the economic categories of the higher phase of communism, there is no doubt that the role of money and prices in influencing production, in constantly stimulating labor productivity, in saving working time and economizing on means of production, will not decline in the process of comprehensive communist construction. This is evidenced by the measures taken by the Party and the government to strengthen the ruble, adjust wages, intensify economies of resources, etc. The use of money and prices under socialism is absolutely necessary for the earliest possible achievement of the Soviet Union's basic economic task — the creation of a material and technical base for communism and the achievement, on this basis, of an exceptionally high level of labor productivity that will ensure an abundance of material goods. Therefore, the idea of limiting the role of money and prices merely to that of recording labor expenditures is clearly invalid. The solution of the task set by the January 1961 Plenary Session of the CPSU Central Committee of developing the production of consumer goods more rapidly than the growth of demand for these goods will increase considerably the possibility of using the law of value in the interests of communist construction. (10)

It is the strengthening and not the weakening of the role which money plays in the national economy that makes it necessary to improve resolutely the rather obsolete system of wholesale prices of the means and instruments of production. This is reflected with great clarity in the decision of the July 1960 Plenary Session of the CPSU Central Committee. A substantial revision of wholesale prices is necessary to enhance their role in the solution of vitally important national economic problems in the phase of comprehensive communist construction and in the accomplishment of the general long-term tasks of developing the national economy. What is needed is not only to ensure the profitability of basically all enterprises, but also to revise price relationships and the geography of prices, using the new proportions of material production (by branch and area as the point of departure). It is also necessary to solve the problem of price formation in the mining industries in order to make better use of our natural resources, as well as to enhance the role of prices in stimulating the introduction and utilization of new technology, improving the quality of output, eliminating seasonal fluctuations in production, developing the more economical materials and types of fuel, and influencing productive consumption.

No form of automation in price formation will make it possible to solve any of these tasks, inasmuch as neither the "method" of prices of production nor the method of equating the price and value of every product take account of all the complexity and many-sided nature of the economic life of socialist enterprises that is reflected in production cost, their level and dynamics. The wholesale price must ensure the conditions for expanded reproduction, focusing the attention of management on the need for the constant reduction of production costs. The portion of profit in the price is of considerable importance not only for ensuring the funds needed to increase fixed and circulating capital; it also influences the process of production itself. There is no doubt that an extremely high and excessive profit in the price exerts no less a negative influence on the economic operations of the socialist enterprise than non-profitability or insignificant profitability. True, some economists deny this thesis as "Philistine" (to quote I. S. Malyshev), erroneously assuming that an excessively high profit and an ever-increasing portion of profit in the price will exert a positive influence on the economics of production.

Setting prices on the basis of prices of production would inevitably lead to a number of negative consequences in the sphere of distributive relations, although the proponents of the average rate of profit deny that there is any connection between prices and distribution under socialism. The introduction of a single rate of profit into the economy, computed through the incorporation of the total sum of profits and the turnover tax into the value of fixed and circulating capital would inevitably lead (taking its repeated influence knto account) to an increase in the wholesale prices of heavy industry goods by 2 to 2.5 times. Such an increase in the prices of means of production would naturally lead to higher construction costs and would require large sums for capital construction jobs (the physical volume remaining unchanged) and for current assets. Higher prices of the means of production will increase costs not only in industry, construction and transport, but in agriculture as well. The financial position of many branches of agriculture, as well as of the collective farms, is such that an increase in the prices of agricultural machinery, fertilizer and other means of production would raise the state procurement prices of many types of agricultural produce. This would make it necessary to raise retail prices of foodstuffs and other commodities (stemming from the present level and structure of retail prices of many commodities that depend directly on the level of wholesale prices of enterprises). It is clear, too, that an increase in retail prices would require a corresponding increase in money wages. And this when the vital task is to sharply increase the output and reduce the production costs of agricultural goods. "Then," Comrade N. S. Khrushchev has pointed out, "the state would be able to reduce the procurement and retail prices of agricultural products. That is our path."

In the light of the decision taken by the Party and the government to reduce considerably the prices of agricultural means of production (spare parts, machines, fuel) as of February 1, 1961, the "theory" of prices of production under socialism and the "theory" of equating the prices of commodities with their value look rather bad. For some of the proponents of indiscriminate increases in the prices of means of production quite recently affirmed that the impossibility of raising the prices of agricultural machinery meant relying on the backward collective farms.

In calculating an average rate of profit in relation to the value of advanced fixed and circulating capital we find that the price level would be higher the higher is the share of material expenditures in production costs. This means that the economies effected through the replacement of human labor by new techniques and technology would not be reflected in prices, for the growth of the mass of profit would be greater than the economy of human labor. Since the prices of means of production would go up faster than the prices of consumer goods and money wages, the relation between the level of prices of means of production (especially instruments of labor) and the level of wages would change markedly. In this connection, the limits to replacing manual by machine labor and old by new techniques would narrow down substantially. This is what largely explains why the price of production concept is inapplicable in the socialist economy.

The practical application of prices of production would transfer the center of gravity in the economic operations of an enterprise from production costs to price, from internal economies to profit. (11) It is not only that a single rate of profit will cause a general increase in prices and engender unnecessary relations of redistribution. The use of prices of production will restrict the application of technology, eliminate the criterion for choosing the most economical means of production, as well as the economic criterion for specialization and cooperation, and will create difficulties in establishing coordination between the material structure of production and the structure of productive consumption. A sharp increase in the prices of means of production will increase considerably the difference between prices and production costs. Under these conditions enterprises will find it "unprofitable" to derive semi-finished goods and parts from outside, on the basis of cooperation, because they will be more expensive or at any rate not cheaper) than the semi-finished goods of their own make. This will undoubtedly cause harm to the division of labor in the economy and slow down the rate of growth of social labor productivity.

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The main argument adduced by the proponents of he concept of prices of production under socialism nd by the proponents of equating the price of every roduct with its value is that in the USSR there are wo different bases for setting the prices of goods in departments I and II. (12)

As for the wholesale prices at which the enterrises sell their produce, there is only one principle f price determination: production cost plus profit. What is more, the portion of profit in the wholesale rice of goods in Group A is almost 50% higher than hat in the wholesale price of goods in Group B; the et income now realized in the wholesale prices of eavy industry goods ensures capital investments nd an increase in circulating capital. There is a eal difference between the level of wholesale prices f enterprises and the level of retail prices. This difference is explained mainly by the relatively high retail prices (as a result of the inclusion of the turnover tax in them) of such commodities as alcoholic beverages, tobacco, cigarettes, cotton and woolen fabrics, sugar, cheese and watches. (13) The turnover tax on some of these commodities cotton, fabrics, sugar) stems from the need to reguate the relationship between supply and demand; in he case of others (spirits, tobacco) — to the necesity of limiting consumption. This explains the exess of the price over the value of the commodities numerated. In the case of some of them (watches, taple fabrics, cheese), the need to reduce prices is ipe. As the demand for sugar and fabrics is satisied, there will arise the possibility and the necesity of reducing their retail prices, largely through he reduction of the turnover tax. As for such commodities as tobacco, alcoholic beverages, etc., the urnover tax will retain its redistributive function. Moreover, the turnover tax includes a definite porion of the surplus product created in agriculture. This includes a considerable part of differential rent, s well as a certain part of the surplus product (not old at procurement prices) which is used by the tate to satisfy the social and cultural requirements f the rural population and for other needs of the opulation. Such is the nature of the bulk of the urnover tax. Therefore one can hardly regard as alid the proposal to extend it in equal proportion to ne means of production and to increase, on this bais, the wholesale prices of heavy industry goods by to 2.5 times. (14)

If, to eliminate the "two bases of prices," we limit ourselves only to increasing the wholesale prices of heavy industry goods by 2 or 2.5 times, and retain unchanged (as is often proposed) the retail prices now existing, notably the low prices of children's goods, of public catering enterprises (public dining rooms), and the high prices of alcoholic drinks and tobacco; and if we retain the low rents, leave unchanged the procurement prices and the wholesale prices of agricultural machinery (these prices have already been reduced), of mineral fertilizer, etc., then there will indeed be at least five or six different bases for price formation in the national economy. The artificial introduction of prices of production and an average rate of profit will require a great many exceptions that will negate the operation of the law of prices of production and the average rate of profit under socialism. These exceptions also characterize, in the main, the planned system of prices that is determined by the economic laws of socialism. In other words, there remains nothing of the "categories" of prices of production and "national economic costs of production." In these circumstances all attempts to retain the procurement and retail prices at the former level would lead to the necessity for state budget subsidies to a number of heavy industry branches (for example, agricultural machine-building), light and food industries (in connection with the increase of prices of machines, spare parts, fuel, materials, metals, synthetic raw materials, etc.). This system of price formation would contradict the principles of cost accounting and economy.

The high turnover tax on certain consumer goods is levied under conditions in which the prices of many commodities and services are considerably below their value, and part of output is made available to the population free of charge (at boarding schools, hospitals, etc.). But only consumer goods, not capital goods, are free. Hence there should be no direct comparison of the share of m in the prices of the means of production and of consumer goods without noting the fact that some consumer goods are given to the population free of charge.

The level of retail prices is influenced not only by the factors of distribution which affect the dynamics of production costs and wholesale prices (increase in the wages of workers engaged in the sphere of material production, changes in procurement prices and in social insurance norms, etc.). Since the level of retail prices also depends on the relationship between demand and supply of commodities, the movement of retail prices depends not only on changes in production costs, but also on increased expenditures for social and cultural needs (including increased wages for workers engaged in the non-productive sphere), on the reduction of expenditures on the country's defense and administration, on the increased size of pensions, allowances and stipends, on the abolition of taxes and loan issues. All these relations of distribution and redistribution do not directly influence production costs and wholesale prices, but they do affect the dynamics of retail prices. This explains why the movement of retail prices deviate more than wholesale prices from changes in value. The movement of retail prices is affected in one way or another by all the forms and methods of distribution and redistribution of the national income.

Improvements in the working people's living standards are not achieved only through the reduction of retail prices. Part of the economized social labor may also be used to increase the consumption fund by increasing personal money incomes and the fund of public consumption. The significance of each of these forms of raising the people's living standards is not at all the same in different historical conditions, in different phases of socialist and communist construction. But all these methods of distributing economies, dictated by the requirements of the economic laws of socialism, cannot help but influence the extent of the planned reduction of retail prices. Moreover, one should bear in mind that economies of social labor serve not only as a source of growth of consumption and socialist accumulation, but also as a source of the reduction in the working day. But there is not and cannot be any contradictions between a reduction of the working day and an increase in the consumption fund. At the present level of development of the productive forces, the reduction in the working day is a consequence of the growth of labor productivity and a precondition for its further rise and for a reduction in the cost of output.

In considering the forms of improving the people's living standards, we should bear in mind the different role they play in the solution of this problem. Although they all ensure a higher level of well-being, each of them does not play the same role by any means in determining the methods of transition to distribution according to needs. For instance, the historically evolved difference in wages paid to different categories of workers cannot be eliminated by increasing the number of free goods and services and by reducing prices. This is only possible through an increase in the wages of the low-paid and certain medium-paid categories, which means a substantial rise in average wages.

Of major importance are the questions of the extent to which the number of free goods and services distributed through the public consumption funds should be increased and of the scale of price reductions. It is clear that the possibilities of reducing the prices of goods in the future depend to a considerable degree on the increase in society's expenditures on the social, cultural and everyday needs of the Soviet people. The extension of this sphere of free goods and services means a relative narrowing of the sphere of commodity circulation and the monetary form of exchange. This concerns a certain portion of output of department II and cannot apply to department I output and to the interrelations of socialist enterprises until the transition to the highest phase of communism is achieved. As long as the law of value is in operation and expenditures of labor cannot be computed directly in working time, the value form of determining expenditures and their commensurability with the results of production, cost accounting and commodity and monetary relations between the socialist enterprises and organizations will remain.

The extension of the free sector in the distribution of goods and services is the path to the gradual satisfaction of various requirements according to needs. It may be said that the satisfaction of part of the population's needs through free distribution is to a certain extent equivalent to a general reduction of prices. Although the source of a growth of public consumption funds as well as of a reduction of prices is an increase in social labor productivity, a reduction in costs, these are not simply alternatives — either an extension of the sphere of free distribution, or a reduction of prices. The socio-economic and, consequently, political tasks solved through the extension of the sphere of free distribution and a reduction of prices are not at all the same. A reduction of prices, like a rise in average money wages, tends to increase the fund of individual consumption, and that is extremely important under conditions of payment according to work. But the extension of the sphere of free distribution presupposes an all-round increase in the public consumption fund and the growing satisfaction of strictly defined requirements according to needs. The fund of individual consumption will increase along with the growth (at a considerably faster rate) of the fund of public consumption as a means of the gradual transition to communist methods of distribution. The elements of the mode distribution inherent in the highest phase of communism are already maturing and clearly developing under socialism, especially under conditions of the comprehensive construction of communism. This corresponds to the growing role of the advanced technology required by communism and is ensured by rising labor productivity.

The increase in the scale of free distribution applies first of all to the sphere of social and cultural services. Education and medical services n our country have been provided free, at the expense of society, from the very first phase of socialist construction. Along with free education and medical services, the USSR pursues a policy of mainaining relatively low prices for mass-produced children's goods. The Soviet state takes special measures to make them accessible to all and to give hem priority in price reduction. The portion of proft in the prices of many of these goods is insignificant, far below the average level of profit. In addiion to reducing the prices of children's goods, the state is expanding the network of boarding schools, kindergartens and nurseries, with the number of children maintained at the expense of public consumption funds increasing all the time.

The Seven-Year plan provides for large-scale construction of boarding schools, kindergartens and nurseries, and for a considerable increase in the number of children in these age-groups to be maintained n these institutions at the expense of society. In the more distant future the majority of children will be maintained at the boarding schools, kindergartens and nurseries at the expense of society. In other words, most of the food, clothing, footwear, school books, etc., will be free of charge. The problem of prices for this category of the social product will hus be eliminated completely. The living standards of children, future active members of the communist society, will be more or less equal even in the early phase of communism; they will be independent of the incomes of the individual categories of workers or individual families.

In addition to free medical treatment, in the uture there will be free distribution of all medicines and vitamins. Later on it will apparently be possible to provide free meals at factory canteens (during the break for meals), and this will be an important element in distribution according to needs. With time, the free distribution of school books and iterature will be supplemented by the free distribuion of certain other types of mass literature that is of special importance for developing the people's communist awareness and culture. Material condiions will also be created for making communal ransport facilities and certain places of entertainment (particularly in clubs and houses of culture) ree of charge.

The utilization of a considerable portion of the savings effected through the reduction of social production costs to increase public consumption unds ensures a tremendous rise, on the basis of communist principles, of people's living standards. This is the special significance of the extension of he sphere of free distribution as contrasted with an ncrease in average wages and a reduction in prices.

Hitherto it has been considered an axiom that the fund of public consumption is derived from the value of the surplus product and, by its nature, is part of this product. However, in order to determine the prospects of growth of the public consumption fund correctly and to understand the tendencies and laws of this process, we must return to the question of the nature of the public consumption fund and the sources of its formation.

The importance of the public consumption fund in raising the workers' living standards will increase systematically. With time this fund will play a decisive role in ensuring the expanded reproduction of manpower and the steady improvement in people's material well-being and culture. If the public consumption fund is formed as a result of the distribution of the surplus product and at its expense, then a steady increase in the portion of $\underline{m}$ and a decrease in the portion of $\underline{v}$ in the value of the social product are inevitable in the future. Ultimately the portion of $\underline{v}$ will become a relatively small magnitude, while the ratio $\underline{m:v}$ (the rate of surplus product), growing rapidly, will reach vast proportions along with a rapid rate of growth of people's living standards. Under these conditions the mass of the value of the surplus product will constitute the main part of the national income. Hence, it would seem, the entire public consumption fund should be included in the workers' primary incomes (in $\underline{v}$). But this is hardly valid, for the differences between the work done by people engaged in material production and in the non-productive sphere would be eradicated. At the same time, the non-homogeneous character of the public consumption fund would manifest itself all the more clearly in the future.

With the extension of the sphere of free distribution, the portion of output (especially foodstuffs) in the public consumption fund consumed by workers (and members of their families) engaged in the sphere of material production will increase. Despite a considerable increase in the number of workers engaged in the sphere of social, cultural and household services, the share of these people's wages in the public consumption fund will not increase because of the rise in the share of goods and services provided free of charge. Therefore it is necessary to divide the public consumption fund into two parts: (a) the part which is connected with the free consumption of material goods by workers of the productive sphere and their families (this portion of the public consumption fund is similar in nature to primary incomes, and its role in covering labor expenditures will increase); (b) the remaining part of the fund, which will be used to remunerate workers engaged in the non-productive sphere. The source of this part is the surplus product.

With the portion of the public consumption fund increasing all the time, it would be wrong to underestimate the future importance of a reduction of prices in increasing the consumption fund and in raising the role of money in the national economy. It should be noted that the rate of growth of the public consumption fund and the extent of retail price reductions are directly related. The extention of the sphere of free goods and services will release considerable sums of the people's money incomes for the purchase of the more expensive and high-quality goods and will alter supply and demand relationships, as well as the structure of demand. The growth of the people's purchasing power will depend not only on the increase in average wages and in the wage fund, but also on the extension of the sphere of free distribution. Linked with this is the influence exerted by the public consumption fund on supply and demand relationships and the movement of prices. (15)

In analyzing the question of price reductions and their role in the distribution of the national income and in raising the people's living standards, it is very important to bear in mind that the policy of low prices for many goods and services makes them accessible to all. The implementation of this policy, closely linked with the utilization and development of the public consumption fund, definitely helps to reduce differences in workers' living standards. Thus, although rents in the USSR are extremely low (Comrade N. S. Khrushchev calls them "symbolic"), the Soviet state is spending huge sums to build new houses and repair old ones at the expense of the public consumption fund. The only basis for improving the housing conditions of individual families and citizens is the degree to which they are provided with living space. Practically speaking, it is not a question of commodity and money relations, and the relationship between the demand and supply of housing does not affect rents, which are set by the state. When sufficient housing will have been built in the USSR, the conditions will have been provided for fully satisfying people's needs for housing and later on, probably, for providing them with housing and community services free of charge.

An important role in raising the workers' living standards is played by price reductions for products supplied by public catering enterprises. The priority reduction in this sphere provided for by the 21st Congress of the CPSU will favorably affect the budgets of workers' families above all, and lighten the work of millions of women. It should be borne in mind that the portion of profit in the prices of products supplied by public catering establishments in mass dining rooms is extremely small — at present it does not exceed 0.5 to 0.7%.

The source of price reductions for these product is a reduction in their costs and in economies effected through reductions of production costs of other types of goods and in the general level of social production costs. This means that the public consumption fund can be used to cover part of the expenses of public catering.

Further improvement in workers' living and cultural standards are to a large extent connected with the comprehensive electrification of everyday activities. When the total output of power will reach 2,300 billion kwh., power consumption for everyday needs will increase many times. This increase will be stimulated by a considerable reduction in production costs and charges for power. (16)

The social nature of the problem of reducing prices in socialist society is dictated by the specific economic laws of socialism, not by the law of value. This reduction of prices is not the consequence of the operation of the law of prices of production and the average rate of profit which, some economists hold, are inherent in the socialist economy. The reduction of value and economies of working time and materials are the only source of reducing the working day, raising average wages, increasing public consumption funds and reducing the prices of goods. Hence, the rate of reduction of value will be faster than the rate of reduction in retail prices, and this means that there is no direc correlation here. This is explained by the fact that in addition to the reduction of prices, the increase in the consumption fund is linked with the development of other forms of distribution of the national income. The different forms of distribution based on the economic laws of socialism cannot help but influence the dynamics of prices.

Footnotes

(1) In this connection we must note the completely unjustified efforts of D. D. Kondrashev in a number of his works to attribute to the author of this article a denial of this tendency and of the nee for a reform of wholesale prices.

(2) On the whole, the rate of growth of labor productivity is greater than the rate of growth of wage Nevertheless, this need not be so far the rate of growth of wages and labor productivity among low- and medium-paid groups of workers. This ensure a more balanced distribution of the consumption fund and the elimination of excessive and presently unjustified discrepancies in wages.

(3) It is due to factors bound up with the relations of distribution that certain labor-consuming

branches became unprofitable both before the war (after the revision of wholesale prices and the abolition of budget subsidies in 1936) and in recent years, despite the considerable improvement in the system of wholesale prices of the means of production after price revisions in 1949-1955.

(4) See *Voprosy Ekonomiki*, 1960, No. 12, p. 90.

(5) *ibid.*, p. 93.

(6) *ibid.*, p. 94.

(7) Here we put the sign of equality between surplus profit and differential rent, the appropriation of which is linked with private ownership of land and mineral riches, with the category of false social value in conditions where the law of market value plays a regulating role. But, as Marx wrote, landed property "is not the cause of the creation of such surplus profit, but the cause of its transformation into the form of ground rent, and therefore of the appropriation of this portion of the profit, or commodity price, by the owner of the land or waterfall" (*Capital*, Vol. III, 1954, p. 660). The excess of the market price of agricultural products over their real price of production occurs on the basis of the capitalist mode of production; it is the consequence of the law of value and asserts itself "through competition; the latter creates a false social value." In this connection Marx wrote: "...It is equally wrong to say that the value of products would remain the same if capitalist production were superseded by association" (*ibid.*, p. 674).

(8) *Voprosy Ekonomiki*, 1960, No. 12, p. 99.

(9) *ibid.*, p. 103.

(10) The solution of the task of fully satisfying the growing demand of the population will eliminate the unfavorable influence which the law of value usually exerts when there is a shortage of certain commodities on the market. The development of the production of consumer goods more rapidly than the growing demand of the population will ensure a positive balance of the monetary incomes and expenditures of the population, reserves to influence the market, will considerably enhance the role of planned price formation, increase the possibilities of reducing prices and further strengthening the purchasing power of the ruble.

(11) Thus, according to approximate estimates, if prices are set on the basis of prices of production an increase of the coal price by 4/5 is connected with profit, of machines — by about 2/3, etc. The most profitable will be the coal industry, hydropower stations, production of spirits, etc.; the least profitable — the gas industry, thermal power plants, the output of synthetic alcohol and plastics, the aluminium industry, etc.

In the case of a single rate of profit (in relation to the funds advanced) there will be a relative increase in the prices of plastics and a decrease in the prices of timber, inasmuch as the so-called specific capital investments per cubic meter of timber and sawn timber are much smaller than those per cubic meter of polypropilene. A single rate of profit weakens the "competitive power" of many types of plastics compared to zinc and lead. Per cubic meter some plastics require greater outlays than aluminium. There will be a change, but not in favor of the expanded productive consumption of the most effective and economical building materials, in the relationship between the prices of reinforced concrete structures and details (of all types of prefabricated structures) and the level of prices of bricks, timber and metals.

(12) This version is backed by a wrongly calculated and sharply underestimated index of wholesale industrial prices, which has become widely used recently.

(13) The overwhelming bulk of the turnover tax is levied on the above-mentioned commodities.

(14) The "uneven distribution" of the turnover tax is determined by its very nature, and on the basis of this certain economists (including Academician Nemchinov) are prone to conclude that we have a two-scale system of prices. Hence the proposal to "average" and abolish the "one-sidedness" in the levying of the turnover tax and to establish a single average rate of profit. At the same time these economists, adducing their principle of determining the prices of concrete types of commodities, recommend that we limit the price revision only to the wholesale prices of heavy industry goods, and not all of them at that.

(15) Broad prospects for reducing retail prices are linked with a more rapid rate of growth of agriculture and of consumer goods output than of the increase in the people's purchasing power, as well as with a considerable reduction in the cost of agricultural produce.

(16) It should be pointed out that the present charges for electric power for household needs are not equivalent to the prices of kerosene, wood, gas and steam. Therefore when electric power replaces other types of fuel there will be a need to revise the charges for it.

WAGE ADMINISTRATION AND WAGE PLANNING

Sotsialisticheskii Trud, 1961, No. 4

E. KAPUSTIN:

Some Problems of Further Improving the Organization of the Wage System

The tasks set by the 21st Congress of the CPSU in the sphere of regulating wages are being successfully accomplished.

This regulation is directed, first of all, toward eliminating unjustified differences between the wages of low-paid and high-paid workers chiefly by raising the minimum wages which were established in 1956, to 40-45 rubles a month, the basic rates of workers of the lower categories in heavy industry to 45-74 rubles, in construction — to 56 rubles, and in the main branches of the light and food industries — to 45-54 rubles. If we bear in mind that with the introduction of new terms of payment for work the basic wage rate amounts to 75-85% of the workers' earnings as a rule, the actual earnings will be still higher. The basic rates and wages of workers in the middle brackets are also being considerably raised.

The number of workers with a monthly wage of up to 60 rubles dropped by more than 50% after wages were adjusted in the coal, iron and steel, chemical, and cement industries, as well as in enterprises producing articles and parts of concrete and reinforced concrete. In ferrous metallurgy and the cement industry the number of time-workers with a wage of up to 50 rubles a month dropped to less than a fourth of what it had been. The abolition of taxes which has already begun also means an increase in actual wages.

The main task of regulating wages are also reflected in the organization of wage scales, the system of salary rates and the bonus system. In the new wage scales the ratio of the wages of the highest to the lowest categories is reduced as a rule from 2.5-3.5:1 to 1.8-2.0:1. The gaps between the lowest and highest salary rates of engineers and technicians have also been reduced. The new bonus regulations have done away with the numerous forms of rewarding personnel for one and the same index, as well as with the payment of exorbitantly large bonuses for criteria of secondary importance. Furthermore, the percentage of bonuses in relation to the salary rates of all administrative, engineering and technical personnel who are rewarded for the same indices has been unified. The maximum bonuses have been somewhat reduced. Certain excesses which were permitted in connection with the regional regulation of wages and their organization according to the departmental principle have also been eliminated.

The existence of a multitude of wage conditions is now being ended in accordance with the branch principle, and uniform wage scales, basic wage and salary rates are being established. There will be 12 wage scales instead of the approximate 1,900 scales existing previously. The number of differen basic wage rates is being reduced from several thousand to about 43 (the different rates depending on the conditions of work and forms of payment. The number of salary rate schedules has been reduced from 700 to 30-35.

The classification of jobs and the distribution of workers according to wage scale categories are based on the new branch job classification handbooks, and for workers of related trades — on the Uniform Job Classification Handbook.

For most branches of industry differences in basic rates have been established depending on the conditions of work. For instance, in underground work basic rates are about 20 to 25% higher than for similar work on the surface of mines and pits. In sections where the temperature is high and the work is difficult, as well as in sections where working conditions are harmful, wage rates are from 10 to 15% higher, and where the work is especially difficult, about 15 to 20% higher.

The State Committee on Labor and Wages and th All-Union Central Council of Trade Unions have approved a uniform list of jobs which are paid according to these higher rates.

Uniform salary schedules based on the types of work done by enterprises, shops and sections are established for engineers and technicians.

Employees of enterprises are paid according to two systems of salary rates in heavy industry, and also t enterprises of the light and food industries.

In the earnings of piece-workers the share of basic rates is being raised from 45-50 to 70-75%, and in the earnings of time workers — to 80-85%. This, in the main, creates the necessary conditions or the extensive introduction of technically substantiated output quotas and for considerably increasing the influence of all ements of the wage system on the workers' earnings. For instance, in the basic production of the iron and steel industry the share of basic rates in the earnings of piece-workers increased from 54 to 74%, and of time-workers — from 72 to 88%; in the chemical industry he respective figures are from 45 to 73% and from 72 to 88%. At the same time the range of fluctuation of the share of basic rates in earnings according to branches of industry decreased.

The higher basic rates create favorable conditions for the introduction of technically substantiated output quotas and, on this basis, an improvement in he organization of quota setting. For instance, by April 1960 technically substantiated output quotas in he coal industry constituted 79% of all existing quotas, in the iron and steel industry — 75%, in nonferrous metallurgy — 74%, in the oil extracting industry — 73%, in the building materials industry — 72%, in the chemical industry — 69%, and in the oil refining industry — 64%. The result was that the exorbitantly high level of overfulfillment of output quotas (150 to 200% and more) by most workers was ended. For instance, in March 1960 the output quotas were fulfilled on the average by 107% in the oil extracting industry, by 108% in oil refining industry, and by 111% in the chemical industry.

Further improvements in the organization of wages were reflected in the elaboration and application of the most effective wage systems, as well as n improvements in the application of their piece-work form. With the liquidation of fictitious piece-work, which was formerly widely in effect in a number of branches of industry — especially in the chemical industry — the proportion of piece workers decreased somewhat. The progressive piece-rate system, which was very unclear to the workers and economically ineffective, has been almost completely eliminated, and it has been replaced by a system f bonuses for quantitative and qualitative indices f work. In particular, it has been replaced by the collective rewarding of workers for the fulfillment and overfulfillment of production assignments.

The piece-rate-plus-bonus system and the time-rate-plus bonus system are becoming the basic ones n industry. Collective forms of pay based on the final results of production are being widely used. At present the bonus system embraces most of the workers. A new bonus system has been established for engineers and technicians in some branches which stimulates the fulfillment and overfulfillment of the plan for reducing production costs, as well as the plan for the volume of output. In order to accelerate technical progress, beginning in January 1961 a system of material incentives for engineers, technicians, workers and employees has been introduced for the elaboration and application of new technique and technology of production.

The improvements in the organization of wages system have increased the material incentive of workers to raise labor productivity, lower production costs, and to fulfill and overfulfill production assignments. Taking industry as a whole, labor productivity increased by 6.4% in the first half of 1960 as compared with the same period of 1959. In the coal industry the increase in the average monthly labor productivity of the workers amounted to 6.2% in the first half of 1960, instead of 1.3% in 1956. The increase in coal production in 1960 was achieved through an increase in labor productivity alone. In the iron and steel industry in two years of work under the new conditions of pay and the shorter working day the average monthly labor productivity increased by 13.7%. At 416 machine-building enterprises which employ about 700,000 workers, the increase in gross output in the first quarter of 1960 amounted to 19.6%, labor productivity increased by 10.5%, and wages by 5.5%. As compared with 1959 the hourly labor productivity increased by more than 10% during the year in industry, including 12% in the fourth quarter.

However it would be wrong to think that with the completion of wage adjustments the tasks of further improving wage organization are no longer urgent. The technique and technology of production, as well as the organization of production and work are constantly being improved, with the result that certain changes must be introduced in the organization of the wages of workers and employees. Technical progress produces changes in the skill and occupational composition of workers and employees. The general educational level and production training of the youth are improving. The working and living conditions of workers and employees are changing, etc.

Improvements in the organization of the wage system should reflect the problems that ensue from the tasks of the comprehensive building of communism: educating the new man of the communist society, a man for whom work becomes the primary vital need; stimulating the combination of trades and the mastery of allied trades, which broadens the outlook and creative interest in work and contributes to the gradual eradication of essential differences between intellectual and physical work, and leads to the liquidation of that division of labor which enslaves man and which was inherited from capitalism.

The need for further improving the organization of the wage system stems from the need to strengthen the material interest of workers in the results of their labor in order to accelerate the pace of social production and to satisfy the needs of the people more fully. It also stems from the tasks of intensifying the communist upbringing of the working people.

In accordance with the decisions of the 21st Congress of the CPSU, important changes will be introduced between 1963 and 1965 in those aspects of the organization of wages which were established in the course of the wage adjustments. In this period the minimum wages are to be increased by 10 to 15 rubles and brought up to 50 to 60 rubles a month. At the same time a certain rise in the wages of middle bracket workers and employees is also provided. Therefore the wages of workers in the lower brackets must be substantially raised. Whereas the wage rates of workers in the higher brackets will be changed only to the extent that this is necessary to continually ensure a normal ratio of basic rates to the actual earnings of workers, the wage ratios between the lowest and highest brackets in the wage scales will be considerably reduced. We will actually have new wage scales which will be different from those that were introduced when wages were adjusted in the period 1958 to 1962. The rise in the rates of workers in the middle brackets all the more will pose the task of changing the wage scales introduced during the wage adjustments. An increase in the minimum salary rates and some increase in the wages of engineers, technicians, and office employees in the middle brackets will obviously call for the introduction of certain changes in the system of salary rates as well.

Thus the decisions of the 21st Congress of the CPSU already require the introduction of substantial changes in the basic wage rate systems which were established when wages were adjusted as a whole, and in the salary schedules of engineers, technicians, and office employees.

On this basis it becomes possible to further improve the organization of the wage system in the period 1963 to 1965, and this improvement can be continued over a longer period, when the wage level will be even higher. In our opinion a great deal of attention must be paid to changing the basic rate system for workers and the system of salary rates for managerial personnel, engineers, technicians, and office workers. It must be borne in mind that the methods and periods required for the reorganization of the various aspects of the wage system cannot be identical. The output quotas mus constantly be improved on the basis of organizational and technical measures which make for a ris in labor productivity. With the development of production technology and the organization of labor, necessary changes should be introduced in the form and systems of payment. For instance, the time-rate method, the collective piece-rate method, and bonuses for improving qualitative indices are becoming more widespread; the size of bonuses paid to individual groups of workers are changing, etc. All of these are put into effect by the enterprises on the basis of methods and instructions which are drawn up in a centralized manner. Thus, with the exception of standard bonus regulations, the defect can be quickly corrected directly at the enterprise

The situation is different insofar as changes in the basic rate system are concerned. This system serves as a lever for the state regulation of the wages of workers and employees. All wage scales, rates, job classification catalogues and systems of salary rates are established in a centralized manner. It follows therefore that no corrections, changes and additions can, as a rule, be introduced in these directly at the enterprises. That is why changes in the wage rate system for workers and in the salary rate system for employees are introduced usually after a relatively long period of time. This is also connected with the tasks of intra-branch, inter-branch, and inter-regional regulation of wages, tasks which require that changes in the wage rate system be made not for individual enterprises, and not even for individual branches of industry, but for branches of the national economy or even for the entire national economy.

A most important question in any improvement of the wage rate system is that of ensuring uniformity in the payment for work depending on the skills required, in other words, ensuring uniformit in the classification of all jobs on the basis of the complexity of their fulfillment. At present the regulation of wages creates uniformity in the classification of jobs by introducing uniform wage scales for the branches of industry and job classification catalogues which are used at all the enterprises of the given branch of industry without exception. A certain inter-branch uniformity in classifying similar jobs is also ensured on the basis of the Uniform Job Classification Handbook for workers in relate trades. All of this has destroyed departmental barriers in classifying jobs and has eliminated the completely unjustified diversity in payments for similar work.

However, this problem of creating uniformity in

e payment for all work, depending on the degree of
omplexity of its fulfillment, has not yet been fully
olved for the national economy as a whole. The
ame category of work performed by workers in dif-
erent branches does not yet mean that this work is
dentical in the complexity of its fulfillment. Work
f the same complexity, even when the methods used
establishing job classifications are the same, can
e assigned to different wage grades in two branches
f industry simply because these branches have wage
cales with a different number of wage grades. If a
even-grade wage scale is fixed for one branch and
six-category for another, then even if there is uni-
ormity in the methods of evaluating jobs from the
oint of view of the complexity of their fulfillment,
hen job classification catalogues are prepared the
ost difficult work will be included in the seventh
age grade in one branch of industry, and in the
ixth in the other. Such a discrepancy may arise
espite the fact that the work may be alike in the
omplexity of its fulfillment, or it may even happen
at the work which, in one branch of industry is
lassified in the sixth wage grade, may be more dif-
icult and may require greater skill on the part of
e worker than work which , in another branch of
ndustry, is given a seventh wage grade rating.

Thus the material incentives of workers of differ-
nt branches of industry to raise their skills will
ndoubtedly differ, especially if we consider that
ven where there are the same number of wage
rades in a scale the differentials between adjoining
age rates may differ.

Therefore if the very wage scales lack the neces-
ary uniformity, the branch job classification cata-
gues — regardless of the methods used — will not
e able to ensure uniformity in the classification of
l jobs among wage grades in industry, and especi-
lly in the entire national economy. The solution of
is problem is particularly important inasmuch as
e centralized regulation of wages in the entire na-
onal economy is made difficult if there is no uni-
rmity in the classification of jobs among wage
rades. It will be impossible to analyze with suffi-
ient precision the wage relationships by branches
f industry, regions, skill groups, etc. We cannot
ssert that work of similar complexity in various
ranches of industry is paid differently simply on
e basis of the special working conditions in the
iven branch or because of its national economic sig-
ificance. It is possible that mistakes have been
ade in assessing the complexity of the work, which,
turn, makes it difficult to observe the principle of
qual pay for work of equal complexity.

It seems to us that the most correct ways of es-
blishing uniformity in the payment for work is the
ational economy according to its complexity are as
follows: first, to draw up and introduce a uniform wage scale; second, to apply branch job classification catalogues compiled on the basis of uniform methods of distributing jobs according to the complexity of their fulfillment; and third, the creation of a uniform schedule of salary rates and job specifications for engineers, technicians, and office employees.

The eradication of departmental confusion in the organization of payment for work and the establishment of uniformity within the branches of industry have created the necessary conditions for the solution of these urgent problems.

As a result of the experience acquired in elaborating and introducing the Uniform Job Classification Catalogues for workers of related trades, it is much easier to devise uniform methods for preparing branch job classification catalogues. The main difficulty now is that of correctly comparing, from the point of view of their complexity, jobs which are specific to the various branches. We have actually already done such work in preparing the branch catalogues and especially the Uniform Job Classification Catalogue for workers of related trades. Even the old departmental catalogues contained, to a certain extent, comparisons of different jobs which are characteristic of the various branches of industry. For instance, the catalogue of the former Ministry of the Electrotechnical Industry, which was based on an eight-grade wage scale, included the most diverse types of work: casting in foundry work, winding work, the pressing of plastics, the adjusting of automatic metal-cutting lathes, etc.

The elaboration of a scientific method for comparing various types of work according to their complexity is an important problem. As we know, there are two views on this question. One is that it is necessary to use the analytic method, on the basis of which the Uniform Job Classification Catalogue for workers of related trades was prepared. The essence of this method is that the working process is split up into the separate working functions which are inherent, to one or another degree, in any form of concrete work. The working functions and the factors that constitute the labor process are evaluated according to a point system depending upon their complexity, and this evaluation is used to rate the complexity of the whole job. The main and, as yet, insuperable defect of this method is that the determination of the relative weight of one or another work function or factor in the point score cannot be scientifically substantiated. It is decided in an experimental way in every concrete case, depending on the group of jobs and, especially, the branch of industry. We can check up only empirically on how correctly the relative weights of the functions have been established. This is done by asking whether they provide a distribution of jobs according to complexity which corresponds to our expectations and experience.

Within individual groups of jobs which are similar in their technology this method gives more or less correct results in the distribution of jobs according to their complexity. However when we have to compare jobs which are specific to the various branches of industry, we come across the kind of difficulties which often make us turn to workers with practical experience in order to evaluate the complexity of the jobs.

According to the other view, it is proposed that the chief method used be one which is based on the time necessary to train a worker capable of doing this job. At first glance this seems to be the most correct and the simplest method. Indeed, in order to compare any objects and phenomena it is necessary that they have something in common. Various types of jobs differ from one another in the specific methods of work, in their concrete aspect. If we wish to compare them according to their complexity, what they have in common is that the worker must have a certain amount of training to perform any job: he must have a general and specialized education, work experience, i.e., in the final analysis a certain amount of time must be spent to train a worker capable of fulfilling the given job. Thus the problem consists of determining the training time necessary for the performance of one or another concrete job. But we do not yet have scientifically elaborated coefficients for reducing to a uniform index the time necessary to receive general and specialized education and work experience. We have not yet been able to obtain any results from our attempts to ascertain stable quantitative relationships between these three elements in training skilled workers, although we have analyzed a considerable number of job classification and vocational-skill records which were filled out at enterprises. The question is also complicated by the fact that in different age groups the combination of these factors is quite different. The amount of work experience is greatly effected by the specific features of selecting the staffs in the various enterprises, branches and regions, the specific features of the technical equipment of enterprises, and the fact that the period of specialized vocational education of workers is not defined with sufficient exactness. We give an example of a comparison of the amount of work experience of steel smelters of three enterprises, the Petrovskii and Dzerzhinskii plants (the Dnepropetrovsk Economic Council), and the Nizhnii Tagil Iron and Steel Combine (the work experience given here does not include the time spent in studying at industrial training and trade schools (see table shown on the following page).

As we can see from the following data, it is extremely difficult to deduce any definite regulation in the combination of work experience and general and specialized education among workers in the same trade and the same wage grade. There is also little hope that it may be possible to do this wit mass-scale material. It is even more difficult to do this by comparing various trades.

It follows therefore that there is still very important work to be done before it will be possible t apply in practice the method of comparing the complexity of jobs on the basis of the time spent on training the workers.

In the immediate future it will apparently be necessary to apply to so-called analytic method together with the method based on comparing jobs according to the time spent on training workers capable of performing them adequately.

The introduction of a uniform wage scale instea of the branch scales which were established in the course of adjusting wages should constitute a new stage. In this connection the following basic problems must be solved first of all: what is the large number of wage grades which should be set in this wage scale in order that their number be sufficien to differentiate jobs according to their complexity; what grades in this wage scale will apply to the various branches of industry; what should the highest coefficient in the wage scale be in order to ensure on the one hand, a maximum reduction in the gap between the wages of the lowest and highest categories, and on the other hand, the necessary material incentives for workers to advance to the highes categories on the basis of a rise in skills?

Naturally, the replies to these questions will depend on the period during which a uniform wage scale is introduced. This wage scale will, of course, continue to be improved as conditions change.

In order to solve these problems the Labor Research Institute, with the help of workers of the inspection commissions of the State Committee on Labor and Wages, and with the workers of the economic councils and enterprises, selected the most difficult types of jobs in 18 branches of industry. Then they compared these jobs by relating them, from the point of view of complexity, to jobs in machine-building, an industry with a six-grade wage scale.

Machine-building was taken as the basis for suc a comparison inasmuch as at enterprises of any industry we will inevitably encounter, in one degree or another, metal-working and machine-building jobs, and the technologists and personnel concerne

Name of worker	Work experience before receiving highest wage grade (in months)		General education (No. of years)	Vocational and technical education before receiving highest wage grade
	Total	Time spent in this trade		
		Petrovskii Plant		
L.I.L.	11	11	10	Finished college — 5 years
I.F.M.	113	17	7	Factory school — 6 months, specialized secondary school — 5 years
I.I.P.	72	6	10	Finished college — 5 years
N.G.S.	90	69	5	—
		Dzerzhinskii Plant		
M.M.L.	49	49	4	Trade school — 18 months
A.E.V.	204	153	4	—
Iu.I.Sh.	222	63	10	—
Iu.I.Sh.	48	15	10	Finished college — 5 years
		Nizhnii Tagil Iron and Steel Combine		
L.P.K.	95	95	4	Factory school — 6 months, courses — 12 months
G.Z.P.	67	67	4	Factory school — 6 months
Iu.M.Z.	50	50	8	Trade school — 24 months
A.D.M.	45	45	5	Factory school — 6 months, courses — 20 months
M.I.S.	51	51	7	Factory school — 6 months
I.A.S.	40	40	5	Trade school — 18 months
V.M.L.	53	53	7	Factory school — 6 months
L.K.G.	54	54	4	—
A.S.P.	107	81	4	Trade School — 23 months

ith labor and wages in any branch have a clear idea the complexity and variety of machine-building bs. This is all the more true since the bulk of the bs which are classified in the Job Classification atalogue for related trades are machine-building bs, and in the machine-building industry itself a rge number of workers are employed, whose wages e somewhere between the high wage level in the w-material branches of heavy industry and the west level in the branches of the light and food in-stry.

In comparing the complexity of jobs, the work of echanics on the repair of equipment, a trade to be und in all branches of industry, was selected as e "stepping-stone" from jobs which are specific to e given industry to machine-building jobs. A con-derable number of job classification and vocation--skill records were filled out for these jobs in every branch of industry, in addition to the records drawn up for specific trades and types of work. The research was conducted in the Leningrad, Dnepropetrovsk and Sverdlovsk Economic Councils. The evaluation of the complexity of the jobs by experts served as the basis for determining their places in the six-grade wage scale which has been ratified for machine-building enterprises.

During the study it was discovered that the most complex jobs which are specific to the branches of industry investigated are, as a rule, on the same level as the most complex jobs in machine-building, or below that level. Only in a few branches were some types of work considered more complex than the jobs which, in machine-building, are classified in the sixth wage grade. It can thus be stated that there are no jobs, hardly any jobs, in the national economy which are more complex than those in the highest wage grade in machine-building.

As the introduction of new conditions of payment for work in machine-building and the application of the Uniform Job Classification Catalogue for workers of related professions show, six grades in the wage scale are fully sufficient to differentiate jobs in machine-building and metal-working according to the degree of their complexity.

Insofar as the other branches of industry are concerned, the six-grade wage scale is being successfully applied in most of those in which the range of differences between the simple and the most complex types of work is approximately the same as in machine-building. In our view it seems undesirable to establish a larger number of grades in a uniform wage scale, inasmuch as reducing the difference between the wages of adjoining grades would have a negative effect on the material incentives of workers to raise their skills in order to advance to a higher grade. An increase in minimum wages will mean a further narrowing of differences between the lowest and highest wage rates. Whereas, after the wage adjustments these differences were, as a rule, 1:1.8 and 1:2.0, after the introduction of a new, higher minimum, the differences will apparently be reduced to 1:1.6 and 1:1.8. If six grades are used the wage rate difference between adjoining grades will be about 10 or 12%. Experience shows that it would be wrong to reduce further the difference between the adjoining grades. Thus, even at the end of the seven-year period, to say nothing of the more distant future, it is most feasible to have six grades in a uniform wage scale. True, in certain branches in which a definite level of skill has become part of a definite trade, sub-grades may have to be established in exceptional cases in order to establish particular wage levels for certain trades. However this will not impede uniformity in classifying jobs in the national economy according to their complexity, for a given wage grade in any branch of industry will signify approximately the same job complexity and, therefore, about the same time required to train a worker (with the same general-educational background). This, in turn, will contribute to a more sound approach in determining the time needed to train skilled workers for one or another trade and specialty.

It must be borne in mind that the application of a uniform six-grade wage scale by no means signifies that all branches of industry must absolutely apply all six grades. On the contrary, those branches in which specific types of jobs are clearly below the level of the most complex types of work classified in the sixth grade, may have only five or even four grades. Thus the role of a uniform wage scale is primarily that of establishing a uniform criterion for measuring the complexity of work in any branch of industry and the national economy. The grades in this uniform wage scale will indeed be a sort of criterion in the approach to the payment for any work from the viewpoint of its complexity, i.e., the time required to train a worker capable of performing the given job.

Of course when we speak of distributing the branches according to categories of a uniform wag scale, we refer only to the classification of jobs characteristic of a given branch of industry. Related jobs in any branch can cover all six grades o this uniform scale.

It should be noted that the increasing role of technical progress, the rapid pace of technical change in certain branches of the light and food industry, agriculture and the extractive industries will gradually lead to a reduction in the types of jobs which are specific to given branches and to an increase in related jobs which are characteristic o many, if not of all branches. This, by the way, wil constitute one of the bases for marked changes in the division of labor and the creation of prerequisites for man to change the sphere of his activity.

As minimum wages are further raised and the gap between lower and higher wages is steadily decreased, the question of reducing the number of grades in the uniform wage scale even more will arise. It seems to us that the correct way to handl this will be to combine the lower grades instead of reducing the total number of grades and completely redistributing all jobs among the grades of the wag scale. The advisability of this decision stems fro the radical changes which are planned in the skill composition of workers. In the future, youth with an eight-year education and certain production skills and habits acquired during their studies in school will be entering work in industry. Such a worker will be able successfully to do the work classified in the first, second and, later, the highe grades. In neither case will there be any substantial differences in the time required to train the young worker. Thus there will be no grounds for dividing the work into two different grades.

We must also remember that accelerated technical progress and, in particular, the extensive intro duction of all-round mechanization of the production processes will result in a sharp decline in the types of jobs which require simple, unskilled labo This will facilitate even more the task of combinin the first two grades. According to the Uniform Jo Classification Catalogue for workers of related trades, the first grade includes not only those type of jobs which do not require any training, but also those which can be performed by workers who hav a certain amount of general and specialized trainin t would therefore be theoretically correct in the uture to combine the first and second grades into ne, and to pay them the same amount. Apparently his process of reducing the number of grades in he wage scales by combining the lower grades will e continued in the future. This will make it possi- le to reduce the gap between the lower and higher vage rates and the remuneration of low and high- aid personnel.

The combination of the lower grades is also of pecial significance from the standpoint of an eco- omical and most rational expenditure of funds allo- ated for raising the wages of workers in the lower nd middle brackets. Most of the funds, in this con- ection, go to the lower-paid personnel.

However in most branches of industry and the na- ional economy it will be impossible to apply this nethod in the immediate future, in particular in 963-1965, inasmuch as when wages in the lower rades are adjusted most workers, especially in such ranches as machine-building, will be concentrated n the lower grades. More than one third of all vorkers will be in the first two grades. Such a leveling of wages will hardly be justified in the immedi- te future. Therefore a further reduction in the umber of grades in the wage scale by combining the ower grades can be applied only in the more distant uture.

At the same time it is desirable, even during the urrent seven-year period, to combine the lowest wo grades in those branches (ferrous and non- errous metallurgy, the chemical industry, and sev- ral others) where this was not done when wages vere being adjusted, for in these branches new wage onditions were introduced before the decision on aising minimum wages to 40-45 rubles a month.

The national economic significance of branches is aken into consideration when wages are being es- ablished and regulated. Higher wages in the leading ranches of heavy industry are designed to create onditions there for attracting and keeping the best vorkers. Both the basic wage rate system and the onus system are used for this purpose.

The establishment of substantial differences in ayment for work depending on the national econom- c significance of the branch of industry is an objec- ve necessity under conditions of shortages of killed labor. Today the situation as regards the raining and supplying of heavy industry with man- ower has changed considerably as compared with he period of the first five-year plans. Exceptions o this are certain raw-material branches of heavy ndustry, where the turnover of workers is still high. owever, this stems from the more difficult work- g conditions in these branches, differences which ust be reflected in wages.

The problem of labor supply has now acquired, in the main, a regional rather than a branch character. Difficulties are encountered chiefly in attracting and keeping workers in the eastern and northern parts of the country. True, it is the branches of heavy industry which are being chiefly developed in these areas. However, it is advisable to attract and retain workers in these branches not by paying them higher wages, but by ensuring the all-round development of these areas, by greatly extending housing construction, by providing large payments and benefits from the public funds to workers in these distant and sparsely populated areas.

There is no doubt that the growth of workers' skills and the greater moral stimuli to work will make it possible in the future to reduce considerably the differences in wages based on the national economic significance of the branches of industry. At the same time this will bring the wages of workers still closer together.

This task cannot be accomplished in a short period, for it would require simultaneously a considerable rise in the wages of workers in the light and food industries, or a corresponding decline in the wages of workers in the branches of heavy industry, something that is unacceptable. These problems can be solved only gradually, as minimum wages are raised and also as the wages of workers in the middle brackets are also somewhat increased.

A reduction in differences in wages depending on the national economic significance of the industries can be ensured, first of all, by introducing a uniform wage scale with identical ratios of extreme rates for all branches of industry, and also by some reduction in the basic rate differentials for the first grade for the branches of industry and the national economy.

In socialist industry various supplements and special allowances are in effect. These are designed to compensate workers for additional expenditures of energy when working under unfavorable and harmful conditions. A correction factor is used to increase the time quota for work which deviates from normal conditions. Additional rest periods are in effect, a shortened working day, additional vacations, and also special food, etc. Bonuses expressed in percentage of basic rates or simply as higher rates are established for workers with difficult working conditions. In principle, all these bonuses and allowances are meant to compensate for the increased loss of muscular and nervous energy by people working under more difficult conditions as compared with the usual normal ones.

It is our opinion that it would be more correct to compensate for additional labor expenditures under conditions that are harmful to the health of the person not in the form of money, which in most cases cannot help to restore the health and efficiency of the person, but by reducing the length of the working day and by giving the workers additional vacations, providing periodic changes of activity, additional rest periods, special food, etc. Money can be used in individual cases only to compensate for the expenditure of energy in work that is physically more difficult if, for instance, the people cannot be provided with food in the enterprise's dining room. The task, then, is to elaborate a scientific method of distributing all jobs according to the conditions of work, determining the influence of these conditions on the person's health, and regulating the above mentioned forms of compensation. Of course the amount of this compensation should be the same regardless of the grade of the worker or the grade of the work performed.

But this is not enough. A correct, planned distribution of manpower according to trades, types of production, and branches of industry and the national economy requires ensuring not only the compensation but also the material interest of workers in their jobs under conditions which deviate from the normal. This is necessary as long as such conditions of work still exist because of technical reasons.

Apparently the most effective method of creating this material incentive is to raise basic rates by a certain percentage. This is now being done. This method creates a material incentive among workers of any grade, whereas a supplement of a constant absolute amount, while creating a material incentive for workers of the lower brackets will not provide this incentive for workers in the higher ones, or will result in bringing the wage levels of workers of the lower and higher brackets that work under difficult conditions closer together, and unnecessarily so.

It is also desirable to apply this system of jobs which, for technical and organizational reasons, do not yet hold out any promise for the worker (where he cannot hope to raise his skills and wage grade, and hence — his wages) or which are performed under difficult, even if not harmful conditions. We must provide the proper material incentive for workers on such jobs so long as they exist or are not radically changed on the basis of the all-round mechanization and automation of industry.

As the organization of wages is further improved, the following question also arises: should additional payments for difficult working conditions be increased or, on the contrary, should they be decreased? With the mechanization and automation of production processes and a general improvement in working conditions there will be a sharp decline in work performed under difficult and harmful conditions. Ultimately such working conditions will be completely eradicated. Thus the total amount of supplementary payments in the wage fund connected with deviations from normal working conditions will undoubtedly be reduced in the near future and, finally, will be completely eliminated. But in the immediate future the amount of supplementary payments for difficult working conditions, where they still remain, should probably be increased rather than decreased. In view of the general rise in the working people's standard of living it will undoubtedly be necessary to increase the material incentive of workers in order to draw them into work under such conditions.

Differences between the basic rates of pieceworkers and time-workers are being retained in the course of adjusting wages in most branches of industry. These differences are set within a range of 5 to 10%. At present the establishment of such differences stems from the fact that setting work standards for time-workers is not properly organized, and therefore the labor of the piece-worker is, as a rule, more intensive than that of the time-worker.

In the future, with further progress in the all-round mechanization and automation of production processes, the proportion of piece-work will gradually decline and that of time-work will increase. In this connection the setting of work standards for time-workers should be greatly improved. It must be pointed out that the setting of standards for their work is acquiring primary significance and is posed as the chief task in this field. Only when it is solved will the differences between the basic rates of piece-workers and time-workers be eliminated. However, for the next few years it is desirable to retain the differences between the basic rates of piece-workers and time-workers which were established when wages were adjusted.

In raising the salaries of engineers and technicians in the low and middle brackets, it will be possible to further unify the salary schedules and ensure a gradual reduction in their total number. At the same time it is apparently impossible just now to introduce a uniform salary schedule for engineer and technicians in the entire national economy, for this would require a considerable increase in the wage fund which would not be connected with a corresponding increase in labor productivity. Therefore the task of creating and introducing a uniform salary schedule for engineers and technicians in all branches of the national economy can be posed only in the future.

Job classification catalogues for engineers, technicians and office employees must be compiled in the next few years as a decisive basis for this work cientific principles of distributing the work of engieers, technicians and employees according to the egree of its complexity should be worked out in deil. Only then will it be possible to begin compiling uch catalogues. This is a more difficult underking than the compilation of catalogues for workers, nd we have almost no experience in this matter.

Insofar as office employees are concerned, it will robably be possible in the near future, when the inimum salaries are raised, to shift to a uniform alary schedule for this category of personnel in the ntire national economy, inasmuch as the work of ffice employee does not depend at all, or depends nly slightly, on the specific features of the branch f production.

In the course of adjusting wages higher regional oefficients have been established for enterprises, hiefly those in heavy industry, which are located in the northern and eastern parts of the country. Regional differences in pay are determined first of all by differences in the assortment of goods which, in the given region, will provide approximately the same standard of living for the working people, and also by certain differences in the price level. In addition, these coefficients are established in the northern and eastern areas as a material incentive and to retain workers in these areas.

In the future, the all-round development of the branches of the national economy in the northern and eastern areas, the extensive use of social funds, and the creation first of all of the necessary cultural and living conditions with these funds, will make it possible to equalize living conditions in the various areas of the country and to reduce considerably inter-regional differences in wages.

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Planovoe Khoziaistvo, 1961, No. 4

. AGANBEGIAN AND N. RIMASHEVSKAIA:

sing Mathematical Models and Electronic Computers in Economic lanning Calculations for Wages Income, and Consumption

A vast program for raising the people's living andards is being implemented in our country. ithin the Seven-Year Plan period (1959 to 1965) the onsumption fund in the national income of the USSR ill increase by approximately 60 billion rubles. rants and benefits to be paid from the state budget d the funds of enterprises will increase by 14.5 llion rubles. Additional expenditures connected with educing the length of the working day as well as adjustg wages and raising their minimums will exceed 10 llion rubles, and the sum to be gained by workers and nployees from the abolition of taxes will amount, if lculated for 1966, to 7.4 billion rubles a year.

Under these conditions special demands are made the economic planning calculations for wages, inome and consumption. Above all, these must have high degree of accuracy: the modern scale of proction and consumption being what it is, a one per nt error in the calculation of the working people's come means hundreds of millions of rubles a year e left out of account.

Long-range planning calls for a differentiated approach to the problems of living standards in order to gauge the effect of any measure on the income of low-paid, average and highly-paid groups with a view to gradually decreasing the differences among these groups in wages, income and consumption.

In order to substantiate measures aimed at improving the working people's welfare, we must apply new planning calculations, such as long-range calculations on the distribution of workers and employees according to wage levels, wage increases of low-paid, average and highly-paid groups in connection with the abolition of taxes, changes in the material welfare of working people's families (for different groups of families) under the Seven-Year Plan, etc.

These techniques, drawing heavily on mathematics and electronic computers, have been worked out at the General Economic Department of the State Committee on Labor and Wages of the USSR

Council of Ministers and the Department of Living Standards of the Research Institute of Labor. The methods evolved are suitable for calculating the wages, income and consumption of workers and employees for the USSR as a whole, as well as for individual republics and economic areas, and therefore can be used by central agencies as well as the state planning committees of republics, economic councils and other organizations.

Long-range calculations of the distribution of workers and employees according to wage levels with the use of electronic computers. A mathematical-economic model has been worked out at the General Economic Department of the Committee on Labor and Wages (1) for long-range calculations of the distribution of personnel according to wage levels. The model reflects quantitative relationships between the terms of payment (basic rates, scales, salary schedules, job classifications, bonus systems, etc.) on the one hand, and the wages received by individual groups of workers on the other. Given the contemplated terms of payment, the model can be used to predict the distribution of workers by wage levels, i.e., to determine how many will receive up to 50 rubles, from 50 to 60, from 60 to 80, from 80 to 100 rubles a month, etc., after the introduction of the new terms of payment.

The calculations performed with the aid of this model reflect the actual process of the formation of wages and salaries. For example, piece-workers are grouped according to their wages in the following way: first, according to the level of basic rates; then, according to their piece-rate earnings, since the percentage of fulfillment of output quotas is different for each worker; then, according to their basic wages with bonuses taken into account, since some workers receive various bonuses; and finally, according to various other supplements (for night shifts, regional extras, etc.). All these factors combined furnish a complete picture of the total wage distribution of workers. (2)

To construct the economic-statistical model required to solve this problem, we had to analyze the interplay of different factors in the distribution of workers and employees according to wage levels. Special emphasis was placed on the distribution of piece-workers according to quota fulfillment, and of all workers and employees according to bonuses. The investigation was based on the sample survey made by the USSR Central Statistical Administration of the wages and salaries of workers and engineering-technical personnel in March 1956 and March 1959; other sources used were the data of the investigation conducted in October 1934 and data for individual enterprises.

A program for solving the model was prepared for the M-2 Electronic Computer at the Institute c Electronic Machinery of the USSR Academy of Sci ences. Given the terms of payment, about a milli calculations are needed to obtain the contemplate distribution of personnel according to wage levels for one industry alone. The need for an electroni computer will be clear if we consider the fact that conventional desk computer operator performs ap proximately 2,000 calculations during his shift. T M-2 Electronic Computer performs these calculations for a particular industry within 5 or 10 minutes, and the preparation of the initial data, tape punching and decoding are a matter of a few hours

Then we had to check the fitness of the model selected. The relevant calculations were performe for different industries — ferrous and non-ferrous metallurgy, the chemical industry, the cement industry, reinforced concrete production — in which wages had been adjusted and records were availab on the distribution of workers according to wage levels under the new terms of payment. By comparing the distribution according to the data in the records and the actual distribution we could detec deviations due to the inaccuracies of the model, i.e., failure to take into account certain factors affecting this distribution. The comparison made fo average wages showed that these data coincided fairly closely (deviations equalled less than 0.1%). The indices of the calculated and actual distributi of workers by wage levels proved to be sufficientl close as well.

The testing of the model and an analysis of the results showed that the model was quite suitable f practical purposes and since 1959 these calculati have been performed systematically with the aid o the M-2 Computer. First, the calculations covere the branches of industry and construction. They helped in providing an interesting analysis of the fluence of particular terms of payment on increas in the wages of low-paid, average and highly-paid groups of personnel, and on the reduction of differences in their earnings. This made it possible to draw certain conclusions about the adjustment of wages in industry and construction and to detect a number of deficiencies in the realization of these measures, especially as far as quotas and job classifications are concerned, and to map out way of eliminating these deficiencies at the second sta of raising minimum wages (up to 50 to 60 rubles a month in the period 1963 to 1965).

Summary calculations for all industries and for the entire national economy were also performed, above all, for the contemplated distribution of workers and employees according to wage levels following the wage adjustment measures. The calculations showed that the nature of the distributio

ould change significantly when the new payment
rms had been introduced: the number of low-paid
orkers would decrease to roughly 1/3 of the for-
er level, that of average-paid employees would in-
ease considerably, and that of highly-paid workers
ould remain more or less the same. These data
ere used as the basis for planning wages in subse-
ent years.

More detailed long-range calculations were per-
rmed electronically to work out proposals on the
troduction of minimum wages of 50 to 60 rubles,
granting basic wage rate and salary increases to
ose in the middle brackets, and on further im-
rovements in wage systems in the period 1963 to
65. About ten variants of basic wage rate and
lary systems for 1963 to 1965 were checked with
e aid of these calculations; the additional funds
eeded for the contemplated wage and salary rates
ere determined; it was shown how much the wages
low-, average- and highly-paid personnel would
se in the process; the decline in wage differentials
nong various groups of workers and employees
as determined; wage relationships among the vari-
is personnel categories were established, etc. As
result, the variant chosen was the best for the pur-
se of raising the minimum and average wages un-
r the Seven-Year Plan and ensuring a further
nprovement in the wage system. These calculations
ere performed for 1965 for major industries ac-
rding to the various categories of personnel.

Of considerable practical importance were the cal-
lations for the distribution of workers and employ-
s in the national economy of the USSR according
wage levels for each year of the Seven-Year Plan
riod. These calculations were used to determine
e total amount the state should earmark to defray
e gradual abolition of taxes on wages and to estab-
sh what the workers and employees would gain
ncluding calculations for groups with different
ges) from these measures in each year of the Sev-
-Year Plan period.

Finally, calculations are being performed with
ectronic computers to substantiate economically
e proposals on minimum and average wages and to
nprove the payment systems in the long-range plan.

Given the payment terms in the program, the con-
mplated distribution of personnel by wage levels
determined. If the objective is to determine what
yment terms (for example, basic rates for the
rst grade, wage and salary scales) are needed to
sure a certain increase in the wages of low-,
erage- and highly-paid workers, a series of al-
rnative calculations is performed according to this
ogram until the results approach the targets as
osely as possible. This process requires much
ne and effort. Nor is it certain that the payment
terms obtained correspond to the assigned task. Therefore we had to construct a model to determine directly the basic rates, wage and salary scales required for a given distribution of workers by wage levels, i.e., for the contemplated increase in the wages of low-paid, average and highly-paid groups of workers and employees.

The program for these calculations was prepared for the Strela Computer at the Computer Center of Moscow University. By using this program the contemplated system of basic rates, wage and salary scales for the period 1963 to 1965 can be obtained, taking into account the increase in minimum wages to 50 and 60 rubles a month and the abolition of taxes levied on workers and employees.

The increases in the wages of low-paid, average and highly-paid groups of workers in the period 1959 to 1965 were determined, for this purpose, on the basis of the target figures for raising the minimum and average wages under the Seven-Year Plan of economic development. The data obtained were used to calculate the approximate distribution of workers and employees according to wage levels for 1965. On the other hand, tentative figures were obtained for the first grade basic rates, wage and salary scales which were distributed for all industries on a multi-grade grid of rates (salaries) with the initial rate of 50 rubles a month and a certain inter-grade coefficient, 1.025 for example. The contemplated number of piece-workers and time-workers, engineering-technical personnel and office employees were calculated for each wage grade. Provision was also made for distribution of piece-workers according to fulfillment of quotas; a distribution of workers, engineering-technical personnel and office employees according to bonuses received; coefficients for other supplements, regional coefficients, etc.

The problem was to select an initial rate (55 rather than 50 rubles, for example) and an inter-grade coefficient (1.023 rather than 1.025, for example) which would make it possible to distribute workers according to wage levels as closely to the planned assignment as possible. Given the initial rate and coefficient, all other basic rates, wage and salary scales can be calculated. The technique of solving this problem with an electronic computer consists of the successive selection of possible variants of the initial rate and inter-grade coefficient until the optimum parameters are found. The process involves about 10 million computing operations.

At present the calculations for the wage scale and salary systems under the long-range plan are also being performed according to this program.

Economic-statistical model on the formation of family incomes. Planning the people's living standards is impossible without studying the material welfare of families. The latter in turn depends, first, on the income of the family, and second, on the number of its members, with the family's per capita income being the chief index of its material welfare. It is vital therefore to reveal first of all the determinants of the distribution of families by per capita income. Low-paid, average and highly-paid family groups have different living standards. A major task of increasing the Soviet people's living standards is to ensure priority increases in the incomes of below-average-level families and a gradual levelling-out of differences between groups of families.

A scientific approach to planning for higher living standards requires that serious attention be paid to the effectiveness of each measure from the standpoint of its influence on the income of different family groups. In addition, the distribution of the population's income determines changes in demand and hence in the structure and level of consumption.

The distribution of families by per capita income can be derived with the help of a special model of the formation of the working people's income. The model expresses quantitative relationships between the factors influencing family-income formation and the distribution of families by per capita income.

A model of this type calls for a thorough analysis of family-income formation and the stable relationships among the factors affecting it. This work was conducted at the Living Standards Department of the Research Institute of Labor from 1956 to 1959. (3) Factors affecting family-income formation were ascertained first of all. These include: the wages of the principal earner in the family (v); the number of subsidiary earners (r); the relationship between the wages of the principal and subsidiary earners (δ); the ratio of other sources of family income (pensions, grants, scholarships, etc.) to its total wages (α); and the number of family members (m).

The family's per capita income (h) can be expressed by the formula

$$h = \frac{v(1 + \delta_r)(1 + \alpha)}{m}$$

If we take the total number of families, each parameter assumes a distributive character: the distribution of principal earners according to their wages, of families according to the number of subsidiary earners, etc. Among these distributions there are stable quantitative relationships and if we know them we can reproduce the over-all pattern of family-income formation. To study these relationships, the Living Standards Department of the Institute of Labor, with the aid of computer stations, compiled numerous distribution tables on the basis of sample surveys (first, using the data of the All-Union Central Council of Trade Unions on the budgets of 10,000 families, and then, the data of 24,000 forms from the investigation of family income and composition conducted by the USSR Central Statistical Administration in September 1958). These tables were used to calculate statistical coefficient expressing these relationships and constituting the groundwork for the economic-statistical model of income formation. The purpose of the model was not merely to recreate the process of income form tion for a selected set of families for which the coefficients are known, but to connect the sample data with indices of over-all calculations of the distribution of all workers and employees according to wag levels, family composition and income, including wages and other sources of income.

The combination of sample and over-all statistical data in a single model is the only way of obtaining a correct picture of family material well-being Determining the distribution of families by per cap income without such calculations is just about impossible, since the investigation of the incomes of several scores of millions of families would involv very high costs, approximately as great as those incurred in an All-Union census.

Calculations in the model of family-income formation are as follows: the over-all data on the distribution of workers and employees according to wage levels and the sample coefficients on the shar of the principal earners among workers and emplo ees with certain levels of earning are used to obtain the distribution of principal earners according to their wage levels. Having obtained these data, and using information on the number of families with one principal earner and with principal and su sidiary earners, as well as on the distribution of subsidiary earners by wage levels depending on the wages of the principal earners (from sample data), we can group the families according to the total wages of the principal and subsidiary earners. Th table of sample coefficients determining the ratio of total wages to other sources of income is used to group the families according to their total incomes introducing the data thus obtained into the table on the composition of families according to total income levels, we can distribute the families according to per capita income, for which purpose th total income is divided by the number of members of the family in each group.

Each such distribution obtained at a certain stag of the calculating procedure is checked by over-al indices, such as the number of workers and employees, the total wage fund, the total number of families and members of each family, and the sum of other incomes. Appropriate corrections are introduced as soon as any discrepancies are detecte (for example, a distribution of workers and employees by wage levels differing from the total wage fund). As a result the data on the distribution of milies by per capita income are in good agreement ith the indices of over-all data.

About a miliion operations are needed to calculate e family-income formation model. The relevant rogram has been drawn up for the Ural-P Electron- : Computer to perform these calculations within a w minutes.

The model was checked thoroughly before any calulations were attempted in this program: the disibution of 24,000 families by per capita income ere calculated and the data thus obtained were comared with those provided by the investigation forms or these families. Deviations were found to be inignificant.

Using an electronic computer a number of invesgations were performed in 1959 and 1960 with the d of this model.

Mention should be made first of all of the calculaon of the actual distribution of workers and emloyees by per capita income for the USSR as a hole and for individual republics. So far we have epended for such information either on sample budet studies (comprising less than 0.1 per cent of all milies of workers and employees) or the survey of 40,000 families in September 1958 (less than 1 per ent of all families of workers and employees).

Second, a series of calculations was aimed at etermining the effectiveness of different measures esigned to increase the money earnings of workers nd employees from the standpoint of their effect on e material welfare of different groups of families. ith the aid of this model it was shown how the arnings of low-paid, average and highly-paid groups f families would rise and how the gap between them ould change as a result of different measures, viz.:

(a) the wage adjustments;

(b) the increase in minimum wages to 50 to 60 ubles and certain increases in average wage and alary rates in 1963 to 1965;

(c) the abolition of taxes on wages and salaries he distribution, over family groups, of the 7.4 llion rubles earmarked for this measure);

(d) the increase in old-age pensions and chilen's welfare grants.

A third set of calculations was undertaken to dermine future changes in the distribution of familes by per capita income, chiefly for each year of e Seven-Year Plan period, with allowances for sing wages, pensions and grants, changing family mposition, etc.

The model makes it possible to calculate the foration of family incomes. In the future the model ill take into account real incomes which do not ssume a money form, such as state grants for edution, health protection, housing provisions. There re, the model will have to incorporate indices on the age composition of each group of families (according to per capita income) and standard rates of state benefits according to their respective purposes (medical treatment, maintenance of children in children's establishments and boarding schools, education, etc.) per capita and by age groups. Then the model will really be able to exhaustively describe the following:

(a) the formation of total real incomes of all families;

(b) the effectiveness of different measures to extend the benefits paid from the social funds (their effect on the level of real incomes of family groups, in particular, the effect of measures to extend public catering for children, including the reduction or abolition of fees for the maintenance of children in nurseries, kindergartens, boarding schools and prolonged-day groups at schools);

(c) the rise in the future of the real incomes of low-paid, average and highly-paid families and the reduction of differences in their income levels stemming from all factors, and the levelling-out of the real incomes of different family groups as a result of the growth of the social consumption funds.

It is possible to construct models of the formation of family incomes not only for the USSR as a whole, but also for the republics and economic areas.

The problem of models of the formation of family incomes for collective farmers is still an open question. These models should, of course, take into account the specific features of income formation in these families. Yet the general pattern can be fundamentally the same as for families of workers and employees. The chief difficulty in constructing these models lies not so much in setting up their pattern as in the selection and processing of the initial data. What is needed to overcome this difficulty is either a special budget study of peasant families or a simultaneous registration of their incomes, as was done for the families of workers and employees in September 1958. After this model has been constructed we will be able to draw up a single model of the formation of real income for the population of the USSR in terms of social groups.

Economic-mathematical models for calculating the demand and consumption of the working people. The model of the formation of the demand and consumption of workers' and employees' families reflects the relationships between family income levels and age composition on the one hand, and the size and structure of demand and consumption in money and in kind on the other. The pattern of the model has been worked out and the initial data are now being selected. The data used for this selection are taken from tables of family expenditures and consumption by groups distributed by per capita income and age composition. Such tables are compiled at a computing station on the basis of data on family budgets furnished by the USSR Central Statistical Administration. (4) Use will also be made of the over-all registration data on purchases of foodstuffs and manufactured goods, deposits at saving banks, and other expenditures in the population's balance of money incomes and expenditures, as well as information on the consumption of particular goods calculated from commodity turnover indices.

This model will make it possible to solve the following range of problems;

(a) determining long-range changes in the amount and structure of family expenditures and consumption as a result of the rise in family incomes and changes in family composition, as well as possible changes in the demand of workers and employees following different measures to increase their earnings (for example, changes in demand as a result of higher wages for low-paid workers and employees);

(b) taking into account the demand for individual products in regions and cities and hence a better distribution of commodity stocks over the country;

(c) evaluating the effect of measures to develop public catering in all forms (including public catering at children's establishments, etc.) on the level of family consumption.

The model of the formation of the population's expenditures and consumption will be of great help in validating the future budgets of workers' and employees' families. For this purpose, however, the statistical data on the consumption of the population obtained via this model must be combined with certain standard norms calculated by research institutions.

Scientifically substantiated diet norms and rational consumption norms of industrial goods are to be used as standard indices. Scientifically based diet norms for the USSR as a whole as well as for republics and economic regions can be calculated with the use of electronic computers, and a special program has been drawn up for this purpose at the Institute of Electronic Machinery of the USSR Academy of Sciences. The program makes it possible to select, out of equally desirable combinations of foodstuffs satisfying all requirements of medical science, the most economically rational combination, taking into account, first — traditional patterns of consumption, second — the possibilities for the production of individual items under the conditions of the USSR and, third — current and capital outlays needed to undertake this production. This optimum combination can be found by the use of linear programming (simplex) methods in approximately one hour's operation of the M-2 Computer.

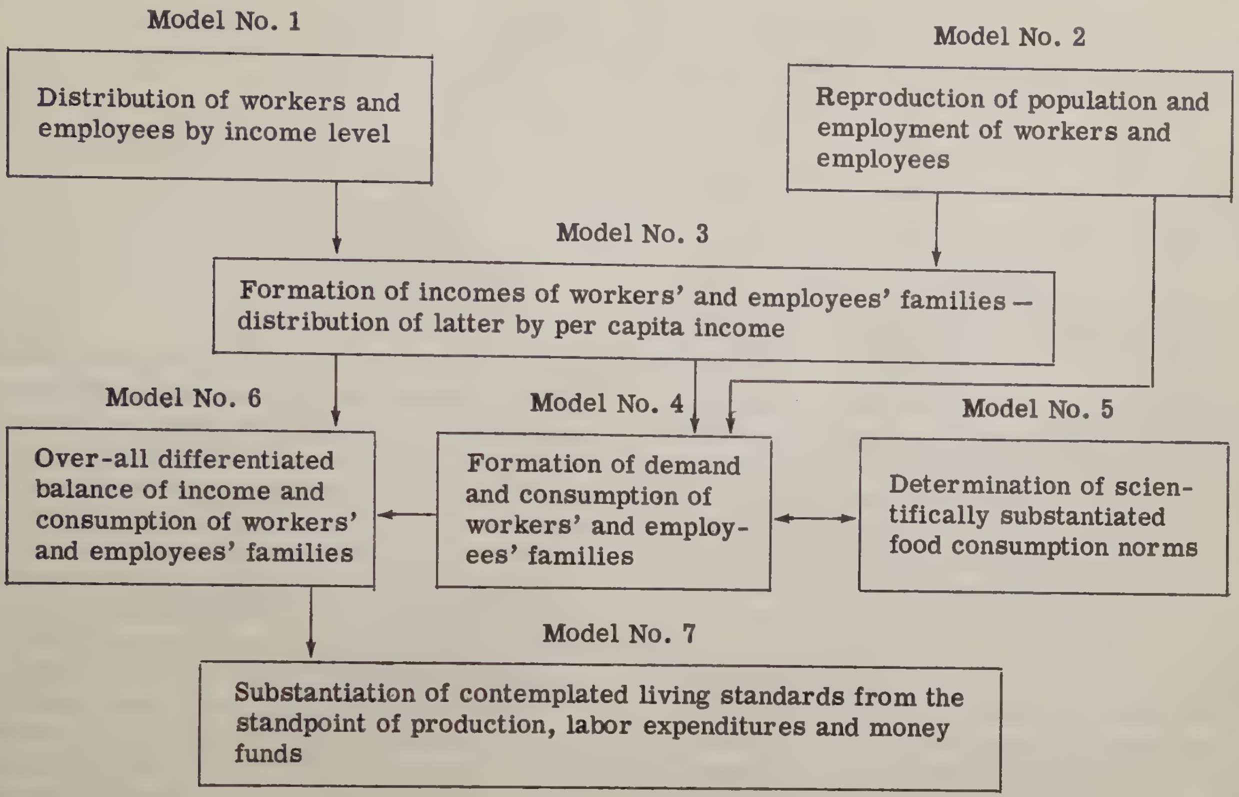
At present the program for such calculations is already beyond the experimental stage. Several variants of scientifically substantiated combinatio of foodstuffs for the USSR have been calculated. There is also the possibility (and such calculation are now being performed experimentally) of using this model to determine retail price ratios of inte changeable foodstuffs and to predict changes in de mand following price reductions for certain foodstuffs. Finally, it is possible to calculate the reta price ratios which will stimulate rational nutrition and this will be of value in setting prices of foodstuffs.

The income, expenditure and consumption mode can be combined into a single income and consum tion differentiated balance model. The latter will reveal the over-all effect of each measure design to raise living standards on the income and consumption of different family groups. This mode, our opinion, will be a major aid in planning living standards.

Family income and consumption patterns depen directly on family composition: the number of earners, children, aged, etc. In order to determi future changes in family composition we shall nee a mathematical model in which family compositio in the years to come would be reflected proceedin from demographic data and employment plans. Th first step has been taken in this direction: the Co puter Center of the USSR State Economic Council has prepared a program for calculating the sex an age composition of the population in the future. T significance of this model transcends the problem under consideration here: it will be able to predi the future size and composition of the population and reveal the effect on the population of different measures (measures to reduce the frequency of il ness, to raise maternity benefits, and others).

A system of economic-mathematical models fo long-range calculations of the wages, income and consumption of the working people. The models under consideration are closely interlinked (the arrows indicate how the calculations in one model are used for the calculation in another) as shown the diagram on the following page.

Let us assume that we have to substantiate the plans for raising living standards of workers and employees by 1970. Model No. 1 is used to calculate the distribution of workers and employees by wage levels in 1970, proceeding from data on changes in the skill and branch composition of wo ers and employees, targets for raising minimum wages and the planned payment systems, as well a the contemplated growth of earnings stemming fr higher labor productivity.


Model No. 1
Distribution of workers and employees by income level
Model No. 2
Reproduction of population and employment of workers and employees
Model No. 3
Formation of incomes of workers' and employees' families — distribution of latter by per capita income
Model No. 6
Over-all differentiated balance of income and consumption of workers' and employees' families
Model No. 4
Formation of demand and consumption of workers' and employees' families
Model No. 5
Determination of scientifically substantiated food consumption norms
Model No. 7
Substantiation of contemplated living standards from the standpoint of production, labor expenditures and money funds

Model No. 2 for the same year is used to predict
e composition of families: the number of able-
odied workers, including those employed, the num-
r of members per family, their age composition, etc.

The results of these two models are introduced as
itial data (along with indices on the development
social consumption funds) into Model No. 3. These
ta serve as the basis for calculating the contem-
ated distribution of workers' and employees' fami-
es in 1970 according to per capita income, inclu-
ng total income with allowances for state grants.

The data on the distribution of families by per
pita income, along with the data on the six and age
mposition of families for 1970 from Model No. 3,
e transferred to Model No. 4, which is used to
edict the demand of families in 1970, as well as
possible structure and consumption level.

The long-term data obtained statistically on the
od consumption of families are readjusted to allow
the scientifically substantiated diet norms taken
om Model No. 5 and rational consumption norms
manufactured goods.

The indices of Models Nos. 3 and 4 (after the ad-
stment) are coordinated ultimately in the over-all
ferentiated balance model (Model No. 6).

Finally, the structure and level of consumption
the broad sense — of the consumption fund) con-
nplated for 1970 are substantiated in terms of
oduction, i.e., it is determined which products
ould be produced and in what quantities they
ould be produced to reach the given level of consumption (Model No. 7). This can be calculated with the model of inter-branch relationships, which necessitates the additional incorporation of material expenditure coefficients and data on the accumulation fund. (5) Using the standard norms of labor expenditures and money funds, the plans for living standards are substantiated in terms of expenditures of labor and money funds.

The use of mathematical models and electronic computers in economic planning calculations for wages, income and consumption shows that each model requires extensive economic analysis, taking account of all possible changes in all factors and selecting the correct initial data. When the desired results have been obtained, the economist is confronted with an equally formidable problem: interpreting these data and coordinating them with other indices. As a rule this requires a series of alternative calculations and the selection of the best variant by means of economic analysis.

It is clear that the application of mathematical models and electronic computers in planning calculations, far from reducing the role of economic analysis, actually requires a more thorough and extensive analytical treatment.

Footnotes

(1) The work was done by A. G. Aganbegian, L. S. Rzhanitsina, and P. F. Zhelezniak.

(2) A more detailed description of the methodology of these calculations is given in the articles by A. Aganbegian in Sotsialisticheskii Trud, 1960, No. 2 and 1961, No. 1.

(CONTINUED ON PAGE 62)

INTERNATIONAL ECONOMIC RELATIONS

Voprosy Ekonomiki, 1961, No.

I. DUDINSKII:

Some Features of the Development of the World Socialist Market

The constant expansion of cooperation and mutual aid among the fraternal socialist countries is a major factor in the development of the world system of socialism. "Guided by the principles of complete equality, mutual advantage and comradely mutual assistance," the Declaration of the Conference of Representatives of Communist and Workers' Parties states, "the socialist states improve their all-round economic, political and cultural cooperation, which meets the interests of each socialist country as well as those of the socialist camp as a whole."

Foreign trade plays an essential role in the development of economic cooperation among the socialist countries. All major forms of economic association among the socialist countries — the joint utilization of natural resources, a broader coordination of national economic plans, economic specialization and cooperation, allocation of credits — lead to the expansion of trade among these countries, to the growth of the world socialist market, i.e., an inter-state sphere of commodity and money relations among the member countries of the world socialist system. The laws of development of this market and the structural principles of the socialist countries' foreign trade stem from the nature of the socialist system and the prevalence of the social ownership of the means of production in the socialist countries.

The incentive for development of international trade in the world socialist system is not profit, but to contribute to the rapid growth of social production and to improve the working people's welfare on this basis. Reciprocal trade among the socialist countries is subordinated to the same chief objective which determine the development of the national economy of each socialist country. Organically linked with the planned proportional development of the entire socialist economy, the foreign trade of the socialist countries helps accelerate their economic development and is an important instrument for overcoming possible disproportions or "bottle-necks" in the economies of individual countries. The development of the world socialist market helps strengthen the economies of the socialist countries and expands their economic cooperation.

Foreign trade assists in the accomplishment of many important tasks of economic development in the socialist countries. Foreign trade is an impo tant factor in the acceleration of the industrializa tion of those countries of socialism which once were economically underdeveloped. The expansio of foreign trade on the basis of international socia ist division of labor enables the socialist countrie to obtain deficient raw materials and fuels, increase their production and thus cut down costs.

Foreign trade is conducted by the socialist stat in all socialist countries. This makes it possible to subordinate foreign trade to the requirements imposed by expanded socialist reproduction and t conduct export-import operations with the optimu combination of national and international tasks. A the same time the state monopoly of foreign trade protects the world socialist market against the un predictable fluctuations of the world capitalist ma ket.

Characteristic features of the socialist countri foreign trade are complete equality, mutual bene and fraternal assistance in economic developmen

The development of the world socialist market marked by a steady increase in volume, by planni in foreign trade and by the principle of equality i commodity exchange.

The socialist market's volume of interchange has been steadily increasing. This is caused by t fact that the economy of the Soviet Union and Peo ple's Democracies has been developing in accordance with the demands of the basic economic la of socialism. The continuous growth of productio in all socialist countries ensures a constant expa sion of their trade. The world socialist market does not have the marketing difficulties inherent the world capitalist market. The socialist syste solves the problem of sale for each individual co try and for the world socialist system of econom as a whole. Difficulties in sale may arise only temporarily for individual items and are easily surmounted. Nor does the world socialist marke ever experience crises or stagnation, characteri tic of the foreign trade of the capitalist countries

In 1959 the Soviet Union's foreign trade had in-
eased more than three times as compared with
50 and 8.5 times as compared with the prewar
vel (in comparable prices). In 1959 alone the
owth of Soviet foreign trade came to 7 billion ru-
es (in the old prices), which is much more than its
tire value in 1938 (2.8 billion rubles in comparable
ices). This quick rate of development has brought
viet foreign trade from the 16th place it held be-
re the war to a position among the leaders. The
lume of Soviet trade with some socialist countries
s, indeed, reached the level of trade of the most
onomically developed capitalist countries. Thus,
ade between the USSR and the GDR was worth 7.7
llion rubles in 1959, which is more than the trade
tween the USA and the FRG and not much less than
at between the USA and Great Britain.

As compared with 1950, Poland's foreign trade
d increased two times by 1959, Czechoslovakia's
d Hungary's approximately 1.5 times, Bulgaria's
ore than 4 times, the GDR's nearly 5 times, etc.
1958 the foreign trade of the Chinese People's
epublic was three times the 1950 level.

Reciprocal trade accounts for the bulk of the so-
alist countries' foreign trade. Thus, in 1959 it
counted for 70% of the total volume of their for-
gn trade. The large proportion of reciprocal trade
the total foreign trade of the socialist countries
flects the development of economic cooperations
nong these countries. However, the figures cited
dicate also that the reactionary circles of some
estern countries have been deliberately interfering
th the development of normal, mutually profitable,
ade between the socialist and capitalist countries.
is manifestation of the "cold war," and "the posi-
ons of strength policy" is in evidence even today,
ough it is clear that the discriminatory policy has
omeranged on its initiators and is actually dama-
ng the economies of some capitalist countries.
for the socialist states, their national economy
rapidly developing, regardless of the state of their
onomic relations with the countries of the capital-
world.

The growth of the socialist countries' reciprocal
ade reflects the process of continuous development
d deepening of the division of labor among these
untries through the coordination of economic plans,
onomic specialization and cooperation within the
amework of the world socialist system. The
claration of the Conference of Representatives of
Communist and Workers' Parties emphasizes
vital importance of steadily improving the inter-
tional division of labor for the development of the
rld economic system of socialism. The deeper
division of labor, the larger is the share of
tput which goes into reciprocal trade.

Foreign trade, in turn, is conducive to the development of interstate specialization and cooperation in production in individual countries. Suffice it to indicate the continuously broadening range of goods entering into reciprocal trade.

The range of machine-tools, machinery and equipment exported by the Soviet Union, Czechoslovakia, the GDR, Poland and other socialist countries for different economic branches has been expanding especially rapidly. Through the medium of foreign trade, these countries are exchanging their latest machinery and equipment on an ever wider scale, accelerating thereby their technological progress. In particular, the world socialist market deals with increasing quantities of equipment for industrial and research atomic installations, various electronic equipment, modern control and measurement equipment, devices for automated control of production processes, computer machines, etc.

The growing trade in machinery, equipment, chemical products and raw materials is an indication of heavier investment of capital in different economic branches, larger production capacities and higher output in the socialist countries. This broadens the export possibilities of each country and creates the basis for a subsequent growth of imports. It is also noteworthy that foodstuffs and products of light industry are entering the world socialist market in an ever greater variety, and that their quality is steadily improving. This promotes a more complete satisfaction of the needs of the peoples of the fraternal countries.

It should be noted that though the volume of foreign trade is rapidly growing in all socialist countries, there are still differences among them in per capita volume of foreign trade. These differences reflect varying degrees of the socalist countries' participation in the international division of labor, which is attributable, to a certain extent, to the characteristics of the structures of their respective economies. On the other hand, it is perfectly obvious that many countries fail to make full use of the advantages accruing from the international socialist division of labor and the world socialist market for the development of socialist production. Vast potentialities for expanding reciprocal trade are still latent in the socialist economies.

It is for this reason that the Communist and Workers' Parties of the fraternal countries pay so much attention to the maximum expansion of foreign trade through higher production specialization, mutual credits, a better clearing house system, etc. The development plans of the USSR and People's Democracies provide for a considerable growth of reciprocal trade. Under the Seven-Year Plan of economic development of the USSR, its trade with the other socialist countries is to increase more than 1.5 times by 1965. Experience indicates that, actually, Soviet foreign trade shows rates of growth far exceeding those specified in the plans.

All member countries of the Council of Mutual Economic Aid are contemplating an increase in reciprocal trade from 1959 to 1965 of roughly 1.7 times, on the basis of bilaterally-conducted trade negotiations.

Another characteristic aspect of the world socialist market is the development of the trade of the countries of the socialist camp on a planned basis. The state economic plans of the Soviet Union and People's Democracies incorporate plans for foreign trade, realized under trade agreements between the socialist countries. Even prior to the coordination of the production plans of the socialist countries, the law of reciprocal trade as a law of the entire world socialist economic system. In contrast to the anarchy and unpredictable conjunctural fluctuations inherent in the foreign trade of the capitalist countries, trade in the world socialist market develops in conformity with the requirements of the planned economy of the socialist-camp countries, and serves as a major instrument in the coordination of their economic plans. As this coordination became more and more direct, the development of the socialist countries' trade took on a more planned character.

Extensive work on preparing and concluding reciprocal trade agreements covering the period up to 1965 was carried on in the Soviet Union and People's Democracies early in 1960. The Soviet Union has already concluded five-year trade agreements with Poland, Czechoslovakia, the GDR, Hungary and several other People's Democracies. The characteristic feature of the new trade agreements is that they reflect the work done on coordinating the socialist countries' economic plans. Thus, trade on the world socialist market depends on the direct coordination of the economic plans of the fraternal countries.

In order to contribute to the development of the ferrous metal industry in the European People's Democracies, the Soviet Union will increase significantly the deliveries of iron ore, coke and manganese ore to these countries. The export of oil, pig iron, rolled ferrous metals and pipes, aluminium and saw-timber, as well as different industrial equipment, from the USSR to the fraternal countries is being expanded. Thus, from 1961 to 1965 the USSR will deliver to Czechoslovakia 38 million tons of iron ore and 680,000 tons of manganese ore, 22 million tons of oil, 8.5 million tons of coal, 1,180,000 tons of apatite concentrate, and so on. The deliveries of Soviet machines and equipment to Czechoslovakia will increase significantly. The Soviet Union will deliver 15,000 tractors, 1,240 excavators, equipment for a high voltage transmission line to connect Rumania and Czechoslovakia, equipment f the textile industry, and so on. As in previous yea the USSR will supply grain and other foodstuffs to Czechoslovakia.

The European People's Democracies, for their part, will expand their exports to the USSR of machines and equipment, chemicals, consumer good and foodstuffs.

Among the socialist countries' exports and imports increasing substantially in general, reciprocal trade in those goods which involve realization interstate specialization will be growing at an especially rapid pace. Thus, the agreement betwee the USSR and the GDR specifies that in 1965 the GDR's deliveries of chemical equipment to the US will be nearly three times their 1959 volume, of r frigerator trains two times, of rolling equipment 1.8 times, and of computing machinery 4.3 times. The USSR will increase the export to the GDR of certain metal cutting machine-tools, heavy-duty d sel locomotives, metallurgical equipment and oth engineering products. Within the same period, Czechoslovakia will increase its exports to the USSR of electric locomotives by 2.5 times, specia and multi-purpose machine-tools by 4 times, chemical equipment by more than 3 times, and equipm for the textile, footwear, leather and knitted-wear industries by 4 times. The USSR for its part, wil sharply increase its deliveries to Czechoslovakia of coal combines, coal-cutting machines and certain types of metal working and forge-press equipment.

A characteristic feature of the world socialist market is the just, mutually advantageous interchange of goods between the socialist countries, adequately reflecting the relations between the values exchanged. The exchange of goods on the world socialist market is based on fair uniform prices which take account of the interests of the countries concerned and conform to the requirements of the law of value. The operation of this law, however, is limited in the trade between soc ist countries. There is neither "free play" of prices, nor petty merchantilism and commercial excitement, or non-equivalent exchange characte tic of the capitalist countries' trade. Commoditie moving on the world socialist market are, by thei nature, free from the antagonistic contradictions capitalist commodities; there is no competition, n are there crises and recessions. This is not to s that no complex problems arise as the world socialist market expands. There can be temporary disproportions on this market, caused, for example, by inadequacies in coordinating the economic

ans of the socialist states. But such dispropor-
ons are of a partial and temporary nature. These
e the difficulties of growth, and not of decline.
ey are fully overcome as the socialist system of
onomy develops.

The operation of the law of value in the world so-
alist market differs from its operation within in-
vidual socialist countries. In these the national
lue of a commodity is basic to its price. On the
orld socialist market the international value of a
mmodity becomes a decisive factor in establishing
price. It is the difference in national levels of
bor productivity that is responsible for a discrep-
cy between the national value of a commodity and
international value, the latter being determined
the conditions of production in a country or a
oup of countries supplying the bulk of the goods in
estion to the socialist market.

At present the prices of a given commodity on the
incipal world markets are taken by the socialist
untries as the basis for establishing the prices in
eir trade. These prices are not transferred auto-
atically, though. Prices on the capitalist market
e subject to speculative fluctuations which have
thing to do with any changes in the conditions of
oduction (creation of strategic stockpiles, war-
flationary spirals, dumping, and so on). The price
ictuations resulting from the inherent defects of
e capitalist economy do not affect the trade rela-
ons among the socialist countries. There are no
predictable price fluctuations in their reciprocal
ade. Prices here are established for a long peri-
, and they remain stable.

A major aspect of price formation on the world
cialist market is the principle of uniformity of
ices. A commodity may fetch different prices on
e world capitalist market. On the socialist mar-
t, as a rule, one price is established for a com-
odity, and this price may only be differentiated to
ow for transport costs and quality.

Viewing the matter in perspective, we believe that
e socialist camp will gradually go over to its own
ice basis in its trade. The objective prerequisites
this transition, which are being created in the
ogressive movement arising in the world socialist
stem, are the growing economic power of the so-
alist system, rising labor productivity and di-
nishing production costs in the socialist countries,
adualy levelling out of the economic development
these countries, and the increasing weight of the
viet Union and People's Democracies in interna-
nal trade.

The transition of the socialist countries to their
n price basis will have great significance for
eater development of economic cooperation. It
ll increase the role of the socialist market in
world trade and consolidate the international economic positions of the world system of socialism even more.

The formation of the socialist market's price basis confronts the economists of the socialist countries with major problems. They must study a vast amount of factual data on the cost accounting systems adopted in the socialist countries, the labor productivity levels attained, and the principles and methods of price formation in the internal markets of the socialist countries. Systematized and generalized, these data will help in the search for ways and means to enable the socialist countries to go over to their own price basis in reciprocal trade.

The profitability of foreign trade in the narrow sense of the word can, in our view, be determined for each particular country by comparing (under some accepted method) the amount of socially necessary labor expended on the production of exports with that quantity of labor which is contained in the corresponding import production. Because of the difficulties comparisons of this kind involve, the existing indices of the profitability of foreign trade give only a rough idea of the gains or losses from foreign trade. These indices cannot, by their nature, reflect adequately all the advantages accruing from the international socialist division of labor. This by no means implies that the significance of a more accurate calculation of the profitability of foreign trade in the narrow sense of the word should be underestimated. At the same time, we can now refer to the profitability of the socialist countries' foreign trade in the broad sense of the word, i.e., the profitability determined by the entire pattern of economic gains derived from the reciprocal trade of the countries concerned. Profitability in the broad sense of the word is determined, apart from the exchange effectiveness of foreign trade (the amount of the foreign payments received for the exports as related to the national costs of the production of the commodities in question), by the socialist accumulation funds released owing to foreign trade and used for accelerating the pace of expanded reproduction, as well as by the reduction of the production costs, due to exports and imports, of nationally produced commodities, the acceleration, due to the same causes, of technological progress and the expansion of individual branches of production, new revenues in the state budget due to the sale of imports on the home market, and so on.

One of the most important and complicated problems involved in the development of the world socialist market is to find the correct means of combining the international division of labor and the profitability of foreign trade for each socialist country. In plan coordination, therefore, due allowances should be made for the price levels of specialized goods. Commodity prices should stimulate rational international specialization of production.

Payments between the fraternal countries are another sphere embraced by relations of cooperation and mutual aid on the world socialist market. They are based on planning, just as are other fields of economic association among the socialist countries. The organization of international payments is directed towards stimulating the development of economic ties among the socialist countries, and towards securing regular and timely payment for commodities and for other operations. The clearing system used by the socialist countries is a major instrument for the planned coordination of the development of their economies and foreign trade.

Bilateral clearing covers the bulk of the goods in trade, largely because most of the trade on the world socialist market is handled under bilateral agreements. Multilateral clearing is also used. Under the latter system, it is sufficient to equalize the exports and imports of a given country in its relations with all countries covered by the multilateral clearing. This system offers additional possibilities for extending trade among the socialist countries. Based on planned economic proportions, it works towards balancing the reciprocal payments of the socialist countries over long periods.

A major, positive role in consolidating the payments system among the socialist countries will be played by the higher exchange rate and gold content of the Soviet ruble. The new rate will help the socialist countries in their joint measures to improve this system. The world's most stable and reliable currency, the ruble, is used as the basis for currency payments among the socialist-camp countries.

Many-sided coordination of the socialist countries' economic plans and the resulting measures to specialize and cooperate in production augment the role of multilateral clearing. As we see it, the latter will gradually rise in importance in the payment relationships among the socialist countries.

As is indicated in the Declaration of the Conference of Representatives of the Communist and Workers' Parties: "The experience of the development of the socialist countries furnishes more evidence that mutual assistance and support, as well as the utilization of all advantages that can be derived from the unity and solidarity of the countries of the socialist camp, are the most important international conditions for their achievements and successes." The world socialist market is of major importance for intensifying the economic cooperation and mutual aid of these countries. This market is important in the development of the national economy of each socialist country. Owing to the vast natural resources of the socialist countries, their industrial power a developed agriculture, the world socialist system possesses everything necessary for the normal e nomic development of each member country. Through the medium of the world socialist marke these countries can exchange material values con tributing to the rapid growth of their productive forces.

The Soviet Union occupies the leading place in t world socialist market. It accounts for more tha one-third of the trade of this market.

Trade with the Soviet Union enables the People Democracies to receive the imports vital for the development of the key branches of their econom Suffice it to say that the Soviet Union's share in t imports of the European People's Democracies h in recent years amounted to roughly 27% for machinery and equipment, about 75% for iron ore, 8 for pig iron, nearly 60% for non-ferrous metals, 97% for oil, roughly 59% for oil products, more th 60% for saw-timber, about 67% for cotton and to nearly 84% for cereals. Of special importance a the deliveries of integrated equipment sets from the USSR to other socialist countries for equippi major industrial enterprises. The USSR delivers first-class integrated equipment sets to the People's Democracies and renders scientific and tec nical assistance to these countries in the constru tion of more than 620 major industrial enterprise and 190 separate shops and installations.

As for the Soviet Union, its trade with the People's Democracies helps it to solve major econo problems and, in particular, contributes to a high rate of development of a number of major industr branches, a strengthening of its supply of raw ma rials and larger stocks of consumer goods.

The People's Republic of China bulks large on world socialist market. Accounting for roughly o sixth of the socialist countries' reciprocal trade, China is the largest exporter of a number of maj industrial and agricultural raw materials, as wel as many consumer goods. As its socialist industrialization advances, China expands the export o machine tools and equipment at a steady pace — chiefly to the Asian People's Democracies. Besides, China is the largest importer of industrial equipment for many of the industrial enterprises under construction in the country. Finally, China imports large quantities of oil and oil products, a well as ferrous rolled metal.

The German Democratic Republic accounted fo over 14% of all reciprocal trade among the socia countries in 1958. The peculiarities of the econo ic structure of the GDR, a highly developed indus trial country with inadequate sources of raw mat rials, determines the composition of its foreign

ade. The GDR is the largest exporter of industrial
ods, primarily machinery and equipment, and an
porter of a great variety of industrial raw mate-
als, fuel and certain foodstuffs. Machine-building
counts for more than one-half of the GDR's ex-
rts. Due to its growing machine building and im-
oving technical standards, the Republic is able to
crease significantly the export of integrated equip-
ent sets, including those for power stations, cement
lls, installations for manufacturing pre-stressed
inforced concrete, textile factories, glass factories
d sugar refineries. The chemical industry bulks
rge in the GDR's exports. Four-fifths of the GDR's
ports are raw materials, semi-finished products
d foodstuffs.

Czechoslovakia, which accounted for about 12% of
e socialist market's reciprocal trade in 1958, has
oreign trade structure similar to the GDR to a
rtain extent. Machinery and equipment are Czech-
lovakia's staple exports. These goods account for
er 40% of the country's total. In the export of
etal working machine-tools Czechoslovakia holds
e fifth place in the world (following the USA, the
G, Britain and Switzerland). Czechoslovakia also
ports metallurgical and electrical equipment. In
cent years the country has substantially increased
e export of integrated equipment sets for metal-
rgical enterprises, electric power stations, chem-
l works, concentrating mills and machine-building
ants, as well as enterprises of the light and food
lustries. Czechoslovakia is also a large exporter
coal, coke, rolled ferrous metal and some other
nds of raw materials which account for over 30%
the total value of its exports. Consumer goods
e a significant item, accounting for about one-
th of the total value of its exports. About four-
ths of the country's imports are industrial raw
terials, fuels and foodstuffs.

Poland's share in the world's socialist market is
ughly one-tenth. Coal is Poland's chief export.
el, raw materials and building materials account
more than 50% of the country's exports. In re-
nt years the share of these goods has been steadily
creasing as a result of the rapid growth of the ex-
t of machinery and equipment (accounting for
5% of the total 1959 export value). The relative
re of the export of foodstuffs has been also been
creasing. Poland imports manganese and chro-
um ore, nickel, tin, cotton, iron ore, wool and
ny kinds of machinery and equipment.

umania's chief exports to the fraternal countries
oil products, saw-timber, cement, soda, man-
ese ores, zinc, and foodstuffs. Of appreciable
portance in recent years have been machinery and
ipment (oil equipment, ships, electric equipment
agricultural machinery). The major imports are machinery and equipment (one-fifth of the total value of the imports), metallurgical coke, iron ore, rolled ferrous metals, copper, aluminium, mineral fertilizers, cotton and some consumer goods.

Manufactured goods account for more than one-half of Hungary's exports at present. Hungary provides the world socialist market with Diesel electric trains, ships, tractors and motorcars. In recent years Hungary has rapidly been increasing the export of precision engineering products, communication facilities and measurement instruments. Hungary has begun to export aluminum, apart from bauxites, and continues to export large quantities of livestock products, fabrics, footwear and other consumer goods. Fuel, raw materials and building materials accounted for over 70% of the country's imports in 1958.

Bulgaria's staple export is its agricultural produce, exported now not as raw materials, but primarily as semi-finished or finished products. Products of the mining industry and of the non-ferrous metals industry that has sprung up on its basis, as well as machinery, equipment and manufactured consumer goods, have been increasingly important in the country's exports. As for imports, machinery and equipment, industrial raw materials and some consumer goods top the list at present.

Albania has been exporting mining and agricultural products in increasing quantities. Oil, bitumen, chromium ore and tobacco account for roughly three-fourths of the country's exports. Albania imports machinery and equipment for building its national industries.

The Mongolian People's Republic is a large exporter of livestock products and an importer of various finished products.

The Korean People's Democratic Republic exports products of its ferrous and non-ferrous metals and extractive industries to the socialist countries, and imports various kinds of equipment, oil products and consumers goods.

The Democratic Republic of Viet-Nam delivers agricultural produce, minerals and products of light industry to the world socialist camp, and imports manufactured goods.

It should be noted that the composition of trade on the world socialist market is constantly changing as a result of changing export possibilities and import requirements of the countries concerned. Underlying these changes are the profound shifts in the economies of the socialist countries as a result of the creation of the material-technical base for socialism and communism.

The growing export of equipment, as a result of the development of machine-building in the respective countries and gradually intensified international specialization and cooperation in this branch, is a characteristic feature of the socialist countries' foreign trade. Concurrently, the export of foodstuffs and agricultural raw materials is substantially decreasing in a number of countries, due to the growth of internal consumption and the relative lag in the pace of agricultural development which has occurred.

The import of equipment to those People's Democracies which used to be backward economically has considerably increased as compared with the pre-war volume. Simultaneously, the industrially developed countries are increasing the import of equipment as a result of the development of international specialization and the expansion of capital investment.

The socialist countries are importing significantly more foodstuffs as compared with the pre-war volume, but in recent years there has been a tendency towards a decrease of these imports owing to the progress in agricultural production. Another trend in recent years is the growing import of manufactured consumer goods.

What changes can be expected in the structure of trade on the world socialist market? There is no doubt that trade among the socialist countries will continue to expand, chiefly due to the growing interchange of equipment, chemical products and major raw materials. It can be assumed, that agricultural progress in the fraternal countries will reduce the trade in cereals. It is equally obvious that the socialist countries will be expanding the import of consumer goods. The range of goods moving on the world socialist market is expected to broaden constantly.

The expansion and improvement of production in the socialist countries, as well as the further development of cooperation among them, will open up new channels for trade on the world socialist market. Thus, the development of the ores of the Kursk Magnetic Anomaly and the creation of new large industrial and power centers in the west of the USSR will intensify the trade between the western areas of the USSR and the European People's Democracies.

The levelling out of labor productivity in the different socialits countries will encourage the expansion and diversification of reciprocal trade. The development of the world socialist market will be stimulated if scientifically substantiated indices of the effectiveness of economic interchange of goods have been worked out and the system of reciprocal payments perfected.

The world socialist market exists alongside the world capitalist market at the present stage of historical development.

The principle of peaceful coexistence, realized b the socialist and many other countries, presuppose extensive economic ties between the countries belonging to the two different markets. These ties exist, and are developing, despite all artificial barriers. The socialist states are working for conditions facilitating the mutually advantageous exchange of goods among all countries. In their economic intercourse with the capitalist countries the socialist states defend the principles of equalit mutual respect and mutual advantage. It is the interconnection of the two world markets that furnishes one of the principal media through which th socialist system can influence its capitalist counte part. By establishing fair prices for their goods and avoiding participation in cartel collusions and speculations, the socialist countries contribute, within certain limits, to more correct price propo tions on the world capitalist market. The trade policy conducted by the socialist countries curbs th monopolies' tendency to artifically force up prices for certain industrial goods and reduce prices for the raw materials expected by the economically under-developed countries.

The continuous growth of production and the improvement of the working people's living standard in the socialist countries are augmenting the expor possibilities and import requirements of the Sovie Union and the People's Democracies, and are increasing the possibilities for mutually profitable trade with the capitalist countries. The economic basis for the peaceful coexistence of the two worl systems becomes more reliable thereby. Prospects of more trade and other forms of economic cooperation between the socialist countries and th young national states which have recently become independent and struck out on their own are especi ally favorable. Both groups of countries are unite by their community of interests against the ignominous system of colonialism, for broader interna tional cooperation, and the consistent realization o the principles of peaceful coexistence.

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A. AGANBEGIAN (Continued From Page 55)

(3) See the monograph it prepared, *Voprosy Truda*, Part IV, Profizdat, 1959, and *Metodologicheskie voprosy izucheniia urovnia zhizni trudiashchikhsia* edited by I. Iu. Pisarev, Sotsekgiz, 1959.

(4) After statistical collation and grouping the budget data must be processed analytically. A special program for an electronic computer has been drawn up at the Institute of Economics of the Acad emy of Sciences of the Armenian Republic to deter mine the consumption of individual commodities according to age groups.

(5) For a more detailed treatment of a model of int branch relationships see the articles by V. Nemchino Berri and A. Efimov in *Planovoe Khoziaistvo*, 1960,

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